



# Missouri Department of Natural Resources

## **Biological Assessment and Stressor Study Report**

### **Troublesome Creek Knox, Lewis, and Marion Counties, Missouri**

**Summer and Fall 2009 – Spring 2010**

Prepared for:  
Missouri Department of Natural Resources  
Division of Environmental Quality  
Water Protection Program  
Water Pollution Control Branch

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## TABLE OF CONTENTS

Section	Page
1.0 Introduction.....	1
1.1 Justification.....	1
1.2 Objectives .....	2
1.3 Null Hypotheses.....	2
2.0 Methods.....	2
2.1 Study Timing .....	3
2.2 Study Area, Station Locations and Descriptions .....	3
2.2.1 Ecological Drainage Unit.....	6
2.2.2 Land Cover Description.....	6
2.3 Stream Habitat Assessment Project Procedure .....	6
2.4 Channel Morphology .....	7
2.5 Biological Assessment.....	7
2.5.1 Macroinvertebrate Sampling and Analyses .....	7
2.5.2 Physicochemical Water Sampling and Analyses.....	8
2.5.3 Discharge .....	9
2.6 Dissolved Oxygen Stressor Study.....	9
3.0 Results.....	9
3.1 Stream Habitat Assessment.....	9
3.2 Channel Morphology .....	10
3.3 Biological Assessment.....	11
3.3.1 Macroinvertebrate Community Analyses .....	11
3.3.2 Physicochemical Water Quality Parameters.....	14
3.4 Diel Dissolved Oxygen Stressor Study.....	16
4.0 Discussion.....	16
4.1 Stream Habitat and Channel Morphology .....	16
4.2 Biological Assessment.....	17
4.2.1 Macroinvertebrate Community.....	17
4.2.2 Water Quality.....	18
4.3 Diel Dissolved Oxygen Stressor Study.....	19
5.0 Summary .....	20
6.0 Conclusion .....	21
7.0 Recommendations.....	21
8.0 Literature Cited.....	22

## TABLES

		<b>Page</b>
Table 1	Location and Descriptive Information: Troublesome Creek Stations in Knox, Lewis, and Marion Counties, Summer and Fall 2009 – Spring 2010.....	3
Table 2	Percent Land Cover for Troublesome Creek Stations in the Central Plains/Cuivre/Salt EDU .....	6
Table 3	Stream Habitat Assessment Project Procedure (SHAPP) Scores and Comparisons with Control Stations.....	10
Table 4	Channel Morphology Including Descriptions of Channel-Width, Wetted-Width, Depth, Dominant Substrate Size Class, Dominant Flow Regime, Bank Conditions, and Riparian Corridor Width.....	10
Table 5	Biological Criteria (BIOREF) Metric Scores, Macroinvertebrate Stream Condition Index (MSCI) Scores, and Biological Support Category or Troublesome Creek in Knox, Lewis, and Marion Counties, Fall 2009 .....	11
Table 6	Biological Criteria (BIOREF) Metric Scores, Macroinvertebrate Stream Condition Index (MSCI) Scores, and Biological Support Category for Troublesome Creek in Knox, Lewis, and Marion Counties, Spring 2010.....	12
Table 7	Dominant Macroinvertebrate Families (DMF) as a Percentage of the Total Number of Individuals per Station for Troublesome Creek Stations in Knox, Lewis, Marion Counties, Fall 2009 .....	13
Table 8	Dominant Macroinvertebrate Families (DMF) as a Percentage of the Total Number of Individuals per Station for Troublesome Creek Stations in Knox, Lewis, Marion Counties, Spring 2010....	14
Table 9	Physicochemical Water Parameters for Troublesome Creek Stations, Knox, Lewis, and Marion County Fall 2009 .....	15
Table 10	Physicochemical Water Parameters for Troublesome Creek Stations, Knox, Lewis, and Marion County Spring 2010 .....	15

## **FIGURES**

	<b>Page</b>
Figure 1	Troublesome Creek in the Central Plains/Cuivre/Salt EDU, Summer and Fall 2009 – Spring 2010 .....4
Figure 2	Troublesome Creek Stations and NPDES Permitted Sites in Knox, Lewis, and Marion Counties, Summer and Fall 2009 – Spring 2010 .....5

## **ATTACHMENTS**

Appendix A	Biological Assessment and Stressor Study Plan for Troublesome Creek in Knox, Lewis, and Marion Counties, July 10, 2009
Appendix B	Macroinvertebrate Bench Sheet Report for Troublesome Creek in Knox, Lewis, and Marion Counties, Fall 2009 – Spring 2010
Appendix C	Dissolved Oxygen Datalogger Location and Summary Information, Graphs, and Dataset for Troublesome Creek in Knox, Lewis, and Marion Counties, August 11, 2009 to August 26, 2009
Appendix D	Missouri Historical Agricultural Weather Database for August 11-26, 2009. Courtesy of University of Missouri Extension

## **1.0 Introduction**

Troublesome Creek is located in the Central Plains/Cuivre/Salt Ecological Drainage Unit (**EDU**) of northeast Missouri (Figure 1). The stream is approximately 46 miles long with a watershed size of 148 square miles (Funk 1968; SCS 1977). The headwaters begin approximately 2 miles southwest of Knox City, Missouri in Knox County (Figure 2; dark red). The upper reach (WBID 0074) of approximately 41 miles is considered a class C stream, which may cease flow but maintains pools even in periods of drought (MDNR 2009c). The upper reach flows to the southeast through Lewis County and into northwest Marion County. The lower 5 miles (WBID 0073; light red) maintains permanent flow, is considered class P, and reaches its confluence with South Fabius River in central Marion County.

The morphology of Troublesome Creek changes significantly from the headwaters to its confluence with South Fabius River (SCS 1977). The upper three-quarters of the stream flows through clay loess or glacial-till soils, which create deep, narrow, and stable channels with substrates of sand and clay. The lower one-quarter is characterized by cherty-limestone bedrock formations with cobble and gravel substrates. The MDNR conducted a biological assessment on the lower one-quarter of Troublesome Creek in the fall of 2004 and spring of 2005 (MDNR 2005). All stations were fully supporting of the protection of aquatic life beneficial use in the fall and two of the three stations were partially supporting in the spring. This project focuses on the upper reach of Troublesome Creek (WBID 0074).

## **1.1 Justification**

Thirty-four miles of upper Troublesome Creek (WBID 0074) are on the 2008 Section 303(d) list of impaired waters (EPA 2009; MDNR 2009a). The reason for listing is low dissolved oxygen, which is based on data collected by the U.S. Geological Survey from 1999-2004 and by the department from 2005-2006 (MDNR 2010f). The impaired beneficial use is for the protection of aquatic life from an unknown source. However, the absence of water movement was said to have previously resulted in low dissolved oxygen in Troublesome Creek (SCS 1977).

The upper Troublesome Creek reach is class C with designated beneficial uses of Livestock and Wildlife Watering (**LWW**), Protection of Warm Water Aquatic Life and Human Health-fish Consumption (**AQL**), and Whole Body Contact (**WBC**) – category B. The WBC “category B” applies to waters designated for whole body contact recreation not contained within category A. An example of category B would be a stream that includes areas not designated as swimming property.

This study was conducted at the request of the Missouri Department of Natural Resources (**MDNR**), Water Protection Program (**WPP**), Water Pollution Control Branch (**WPCB**). A study proposal was written that included a Troublesome Creek stream habitat assessment, channel morphology description, biological assessment, and dissolved

oxygen stressor study to be conducted in, Knox, Lewis, and Marion counties in 2009-2010 (Appendix A).

The study was coordinated and conducted by the Division of Environmental Quality (**DEQ**), Water Quality Monitoring Section (**WQMS**), Aquatic Bioassessment Unit (**ABU**) and the Chemical Analysis Section (**CAS**) of the Environmental Services Program (**ESP**). The goal of this project was to determine if upper Troublesome Creek is impaired using macroinvertebrate community indicators and measures of dissolved oxygen concentration.

### **1.2 Objectives**

- Assess the stream habitat quality and detail channel morphology.
- Assess the aquatic life protection beneficial use status of the macroinvertebrate community.
- Assess the physicochemical water quality of the stream.
- Identify important diel dissolved oxygen concentrations during a stressful period.

### **1.3 Null Hypotheses**

- 1) The stream habitat quality is similar among reaches and comparable to control streams.
- 2) Macroinvertebrate communities are similar among reaches of Troublesome Creek from upstream to downstream and to the biological criteria reference stream index scoring range.
- 3) Water quality is similar from upstream to downstream and within applicable Missouri Water Quality Standards (**WQSs**; MDNR 2009c).
- 4) Daily (diel) dissolved oxygen concentrations will not fluctuate and will be within WQSs.

### **2.0 Methods**

Kenneth B. Lister, Brandy Bergthold, and staff from ESP, WQMS conducted this study. Methods are described in this section. The study timing is outlined. The study area and station locations, Ecological Drainage Units (**EDUs**), and land uses are identified and described. The stream habitat assessment procedures and channel morphology observation methods are outlined. Biological assessment procedures, which include macroinvertebrate community and physicochemical water collection and analyses, are discussed. The dissolved oxygen stressor study methods are outlined in this section.

## 2.1 Study Timing

The stream habitat assessment project procedure (SHAPP) was conducted during two days in the fall of 2009. SHAPPs were conducted at station #1 and #2 on September 30, 2009, while SHAPPs at stations #3 and #4 were conducted September 30 and October 1, 2009, respectively.

Biological assessment samples were collected in the fall of 2009 and in the spring of 2010. Fall samples were collected at stations #1 and #2 on September 30, 2009, while stations #3 and #4 were sampled on October 1, 2009. Spring bioassessment sampling was conducted at all stations on April 6, 2010.

Dissolved oxygen dataloggers were deployed and then retrieved 14 days later in August 2009. The datalogger for station #4 was deployed on August 11, while dataloggers for #3, #2, #1 were deployed on August 12. The station #4 datalogger was retrieved August 25 and the station #3, #2, #1 dataloggers were retrieved on August 26 (Appendix C).

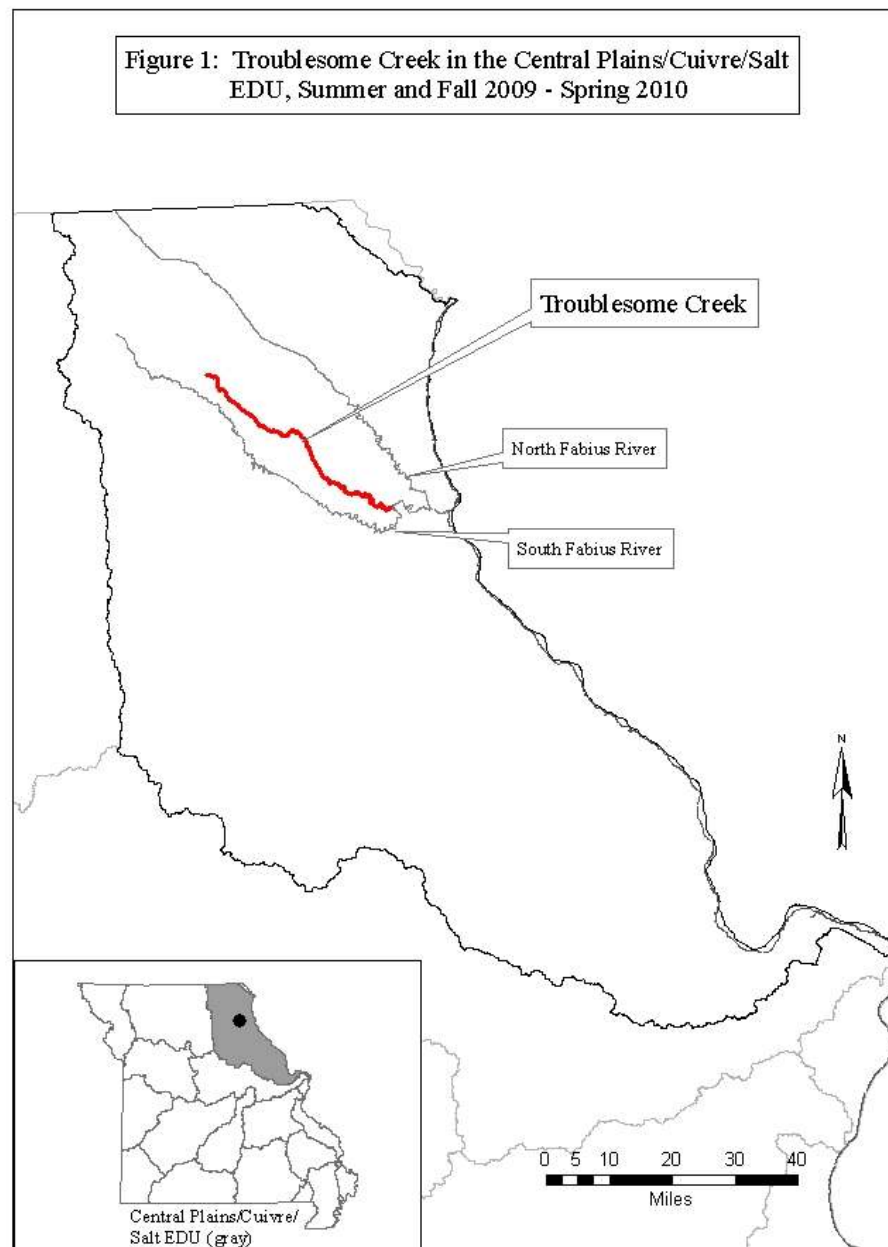
Channel measurements were recorded at the time of biological assessments in the fall. Measurements were not recorded at station #1 because much of the stream was too deep during normal flow.

## 2.2 Study Area, Station Locations and Descriptions

The study area and station locations for the 2009-2010 Troublesome Creek (WBID 0074) project are located in the Central Plains/Cuivre/Salt Ecological Drainage Unit (**EDU**; Figure 1; Table 1). Four stations were allocated for this project (Figure 2). Stations were positioned approximately 5 to 10 miles apart beginning from the upper reach of WBID 0074 and ending approximately 1 mile upstream from the terminus of 0074. Stations were given numbers from upstream (high) to downstream (low). Station #4 is located in Knox County approximately 3 miles south of Knox City. Station #3 is located approximately 2 miles south of LaBelle in Lewis County. Stations #2, also in Lewis County, is approximately 7 miles south of Lewistown. Station #1 is located in Marion County in the McPike Conservation Area (**CA**; Missouri Department of Conservation – **MDC**)) approximately 12 miles south of Ewing, Missouri.

Table 1  
 Location and Descriptive Information: Troublesome Creek Stations in  
 Knox, Lewis, and Marion Counties, Summer and Fall 2009 – Spring 2010

Station	County	Location	Description	Purpose; Class
Troublesome Creek #4	Knox	NW sec.15, T. 61 N., R. 10 W. E0584751 N4438665	Downstream bridge Hwy. E	Test; C
Troublesome Creek #3	Lewis	SE sec. 17, T. 61 N., R. 09 W. E0592561 N4437551	Upstream bridge Hwy. D	Test; C
Troublesome Creek #2	Lewis	SE sec. 13, T. 60 N., R. 09 W. E0598636 N4428209	Upstream bridge (apx. 75 yds.) MO156	Test; C
Troublesome Creek #1	Marion	SE sec. 16, T. 59 N., R. 07 W. E0612969 N4418437	Upstream McPike CA, MDC	Test; C







### 2.2.1 Ecological Drainage Unit

Troublesome Creek is located within the Central Plains/Cuivre/Salt Ecological Drainage Unit (EDU; Figure 1). Ecological Drainage Units are areas that are delineated and identified by their natural terrestrial physiographic division and major riverine watershed components. EDUs are further described in Sowa et al. (2007). Similar sized streams within an EDU are expected to contain similar stream habitat conditions and aquatic communities. Comparisons of habitat and biological and physicochemical results between test and reference streams within the same EDU should then be appropriate.

### 2.2.2 Land Cover Description

Land cover was compared between Troublesome Creek and the Central Plains/Cuivre/Salt EDU using a 14-digit Hydrological Unit scale (HUC-14; Table 2). Percent land cover data were derived from Thematic Mapper satellite data collected between 2000 and 2004 and interpreted by the Missouri Resource Assessment Partnership (MoRAP). The upper stations (#4 and #3) had a higher percentage of crops and lower forest cover than the downstream stations (#2 and #1) or the EDU. Land cover (use) should be considered when examining stream habitat assessment results or biological assessment results between stations or with the EDU.

Table 2  
 Percent Land Cover for Troublesome Creek Stations in the  
 Central Plains/Cuivre/Salt EDU

Stations	HUC-14	Urban	Crops	Grass	Forest	Wet	Open water
Troublesome Creek #4, #3	07110003030001	1	52	31	8	3	1
Troublesome Creek #2, #1	07110003030002	1	33	39	21	2	1
Central Plains/Cuivre/Salt EDU	N/A	3	42	29	19	--	--

HUC-14 = 14-digit Hydrologic Unit Code; EDU = Ecological Drainage Unit n=11

### 2.3 Stream Habitat Assessment Project Procedure

The standardized Stream Habitat Assessment Project Procedure (SHAPP) was followed as described for riffle/pool prevalent streams (MDNR 2010d). According to the SHAPP, the quality of an aquatic community is based on the ability of the stream to support the aquatic community. If SHAPP scores at test stations are  $\geq 75\%$  of the mean control scores, the stream habitat at the test station is considered to be comparable to the SHAPP control streams. The biological criteria reference streams South River and South Fabius River were used as the SHAPP controls for the Central Plains/Cuivre/Salt EDU (Table 3). Control scores were retrieved from the fall 2004 – spring 2005 study (MDNR 2005), averaged, and compared to test station scores. Scoring factors may be included to explain differences, if needed.

## **2.4 Channel Morphology**

Additional habitat examinations included observations of channel morphology, assessment of bank stability, and quality of the riparian corridor recorded at multiple locations within each station. Ten transects were equally spaced within each station using SHAPP (MDNR 2010d) methodology to determine a mean for each parameter per station. Channel-width and wetted-width were measured and recorded at each transect (n=10) to determine the mean channel-width and mean wetted-width. Channel depth was measured at 20, 40, 60, and 80 percent of the wetted-width within each transect (n=40) to determine the mean depth and standard deviation for each station. The substrate size class (i.e. clay, sand, gravel) was recorded for each of the four depth locations (n=40) and later given specific numbers to determine the dominant (mean) substrate size class per station. The flow regime (i.e. riffle, run, pool) was recorded at each transect and likewise given numbers to determine a mean. Bank conditions were categorized using SHAPP methods and a mean was calculated for the left and right descending banks at each transect (n=10). Riparian corridor widths were estimated for left and right banks at each transect (n=10) according to the SHAPP methods, and a width class (mean) was calculated. The means per station were used to describe the stream's morphology.

## **2.5 Biological Assessment**

Sampling was conducted as described in the MDNR Semi-quantitative Macroinvertebrate Stream Bioassessment Project Procedure (SMSBPP, MDNR 2010c). The biological assessment consists of macroinvertebrate community and physicochemical water sampling and analyses.

### **2.5.1 Macroinvertebrate Sampling and Analyses**

Macroinvertebrates were sampled from multiple habitats as described in the SMSBPP (MDNR 2010c). Troublesome Creek is considered to be a riffle/pool dominant stream. As such, coarse substrate (**CS**; riffle), non-flowing water over depositional substrate (**NF**; pool), and rootmat (**RM**) habitats were sampled. Macroinvertebrates were subsampled in the WQMS lab according to the SMSBPP and identified to specific taxonomic levels to standardize calculation of the metrics (MDNR 2010c; MDNR 2010e).

Macroinvertebrate community data were analyzed using three strategies. Macroinvertebrate Stream Condition Index (**MSCI**) scores, individual biological criteria metrics, and dominant macroinvertebrate families (**DMF**) were examined and compared from upstream to downstream.

A Macroinvertebrate Stream Condition Index score is a qualitative or rank measurement of a stream's aquatic biological integrity (Rabeni et al. 1997). The MSCI was further refined for reference streams within each EDU in Biological Criteria for Perennial/Wadeable Streams (**BIOREF**, MDNR 2002). Comparisons are made between test stations and a BIORREF scoring range that was generated from data collected from wadeable/perennial reference samples. A station's MSCI score ultimately identifies the ability of the stream to support the beneficial use for the protection of warm water aquatic life and human health-fish consumption.

A station's MSCI score is a compilation of rank scores that are assigned to individual biological criteria metrics as a measure of biological integrity. Four primary biological criteria metrics were used to calculate the MSCI per station: 1) Taxa Richness (**TR**); 2) Ephemeroptera/Plecoptera/Trichoptera Taxa (**EPTT**); 3) Biotic Index (**BI**); and 4) Shannon Diversity Index (**SDI**). Individual metric scores were compared to the BIOREF scoring range (MSCI Scoring Table, in light gray) and rank scores (5, 3, 1) were assigned to each metric (Tables 5 and 6). Rank scores from all four primary biological criteria metrics were compiled and the MSCI was completed. The MSCI scores are interpreted as follows: 20-16 = full biological support; 14-10 = partial biological support; and 8-4 = non-support of the beneficial use protection of aquatic life (AQL). MSCI scores were also grouped by season and compared among stations.

Secondly, the individual biological criteria metrics for each station were compared to the BIOREF scoring range to identify the level of integrity in the metrics that contributed to the MSCI score. Variations in the metrics may help identify how a community is affected and potentially identify a source of impairment.

The third biological analysis was an evaluation of the “dominant macroinvertebrate families” (**DMFs**) per station. The seven most abundant DMFs for each station are listed as a percentage of the total number of individuals in the sample. Dominance by certain families may help identify the type and source of impairment. A complete taxa list, usually to the generic level, is reported by season and station in Appendix B.

### **2.5.2 Physicochemical Water Sampling and Analyses**

Water was handled according to the appropriate MDNR, ESP Standard Operating Procedures (**SOP**) and Project Procedures (**PP**) for sampling and analyzing physicochemical water samples.

Fall 2009 and spring 2010 physicochemical water parameters consisted of field measurements and grab samples. Field measurements, which included temperature (°C), pH, conductivity (µS/cm), dissolved oxygen (mg/L), and discharge (cubic feet per second-**cfs**), were measured *in situ*. Grab samples were collected according to the SOP MDNR-ESP-001 Required/Recommended Containers, Volumes, Preservatives, Holding Times, and Special Sampling Considerations (MDNR 2009b). Water grab samples were returned to the ESP Chemical Analysis Section in Jefferson City, Missouri for laboratory analyses. These included analyses for nitrogen-ammonia (**NH<sub>3</sub>-N**; mg/L), nitrate+nitrite as nitrogen (**NO<sub>3</sub>+NO<sub>2</sub>-N**; mg/L), total nitrogen (**TN**; mg/L), chloride (**Cl**; mg/L), total phosphorus (**TP**; mg/L), and non-filterable residue (**NFR**; mg/L). Turbidity (**NTU**) was measured and recorded in the WQMS biology laboratory.

Physicochemical water parameters were compared among stations from upstream to downstream, as well as with the acceptable limits listed in the Missouri Water Quality

Standards (**WQS**, MDNR 2009c). Interpretation of acceptable limits in the WQS may be dependent on a stream's classification and its beneficial use designation (MDNR 2009c). The assessed stream reach is class C, with designated beneficial uses of Livestock and Wildlife Watering (**LWW**); Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (**AQL**); and Whole-Body Contact (**WBC**), category B.

### **2.5.3 Discharge**

Stream discharge was calculated for each station. Velocity and depth measurements were recorded at each station in accordance with SOP MDNR-WQMS-113 Flow Measurement in Open Channels (MDNR 2010b). Velocity was measured using a Marsh-McBirney Flowmate™ flow meter.

## **2.6 Dissolved Oxygen Stressor Study**

A continuous dissolved oxygen stressor study was conducted in Troublesome Creek August 11-26, 2009. The Manta™ Water Quality Multiprobe (Eureka Environmental Engineering, Austin, Texas) datalogger was used as outlined in MDNR-ESP-104 (MDNR 2010a). The datalogger at station #4 was deployed from August 11-25, 2009. This (#4) datalogger was displaced downstream from its original location (approximately 10 feet downstream) during a flood, but continued recording. Dataloggers at stations #3, #2, and #1 were active from August 12-26, 2009. All dataloggers recorded dissolved oxygen, temperature, and conductivity at 15 minute intervals. Results will highlight the mean dissolved oxygen, percentage of time below the WQS (5.0 mg/L), and other relevant parameters.

## **3.0 Results**

Results are grouped by 1) stream habitat assessment; 2) channel morphology; 3) biological assessment, which includes macroinvertebrate community analyses and physicochemical water quality parameter analyses; and 4) diel dissolved oxygen stressor observations. Trends and exceptional results are highlighted.

### **3.1 Stream Habitat Assessment**

Three of the four stations were less than comparable to SHAPP control conditions (Table 3). Station #4 had a habitat assessment score that was 73 percent of the mean control score, which is below the similarity threshold described in the SHAPP. Station #3 was 52 percent of the mean control score and was also not comparable. The score at station #2 was 61 percent of the mean control score and likewise was not comparable. Differences were mainly due to available epifaunal substrate, embeddedness, heavy sediment deposition, low riffle quality, bank stability, and vegetative protection. Habitat was comparable to controls only at station #1 with a >75 percent similarity between the test and control stations.

Table 3  
 Stream Habitat Assessment Project Procedure (SHAPP) Scores  
 and Comparisons with Control Stations

Station	SHAPP Score	Percent of control average
Troublesome Creek #4	100	<b>73</b>
Troublesome Creek #3	72	<b>52</b>
Troublesome Creek #2	83	<b>61</b>
Troublesome Creek #1	129	95
*South River #1 (SHAPP control)	140	136 control average
*South Fabius River #1 (SHAPP control)	132	

\* SHAPP control scores from fall 2004 study (MDNR 2005); **bold** = less than comparable to reference conditions.

### 3.2 Channel Morphology

Channel morphology descriptions and measurements also describe the appearance of each station (Table 4). The mean measurements characterized the conditions at each station and the differences from upstream to downstream. Station #4 was approximately 20 feet wide, compared to 35 and 36 feet wide at stations #3 and #2, respectively. The wetted-width increased from 16 feet upstream to 32 feet downstream. Mean depth ranged from 6 inches at station #4 to 16 inches at station #2. The dominant substrate size class was sand or sand/clay. Runs were the dominant flow regime. The left bank condition was unstable at station #4 and moderately unstable at stations #3 and #2. The right bank was moderately unstable at all stations. The left riparian corridor was narrow at station #4 and increased to the highest category at station #2. The right riparian corridor was narrow upstream, but increased to the highest category at station #2. Channel measurements were not recorded at station #1 because of high flow and deep conditions.

Table 4  
 Channel Morphology Including Descriptions of Channel-Width, Wetted-Width, Depth, Dominant Substrate Size Class, Dominant Flow Regime, Bank Conditions, and Riparian Corridor Width

Station	Channel -Width (feet)	Wetted -Width (feet)	Depth Mean (inches)	Dominant Substrate Size Class	Dominant Flow Regime	Bank Condition L	Bank Condition R	Riparian Corridor L	Riparian Corridor R
TC #4	19.7 ±4.6	16.1 ±3.2	6.3 ±2.4	Sand	Run	Unstable Cat. 4	Mod. Unstable Cat. 3	<6.0 meters Cat. 4	11.9-6.0 meters Cat. 3
TC #3	35.1 ±3.6	26.0 ±7.0	10.4 ±5.5	Sand/Clay	Run	Mod. Unstable Cat. 3	Mod. Unstable Cat. 3	11.9-6.0 meters Cat. 3	<6.0 meters Cat. 4
TC #2	36.1 ±6.1	32.4 ±3.0	16.6 ±6.0	Sand	Run	Mod. Unstable Cat. 3	Mod. Unstable Cat. 3	>18.0 meters Cat. 1	> 18.0 meters Cat. 1

TC = Troublesome Creek; Troublesome Creek #1 not described-flow too high to record channel measurements.  
 L = left descending, R = right descending; Meters used in riparian corridor SHAPP procedures.

### 3.3 Biological Assessment

The biological assessment includes results from the macroinvertebrate community analyses and the physicochemical water quality analyses. Results are grouped by season and station.

#### 3.3.1 Macroinvertebrate Community Analyses

Three of the four stations were partially supporting of the beneficial use for the protection of aquatic life in the fall (Table 5). Stations #4, #3, and #2 were partially supporting with MSCI scores of 14. Station #1 was the only station that was fully supporting of the AQL with a score of 16.

All individual metrics contributed to the low MSCI scores at Troublesome Creek stations in the fall (Table 5). The TR, EPTT, and BI metrics were less than optimum at the partially supporting stations (#4, #3, and #2). The BI and SDI contributed to the less than optimal score at the most downstream station (#1) which, despite these metrics, was fully supporting. From upstream to downstream, the TR and EPTT were nearly optimal at #4, and decreased downstream before increasing to the optimal range at the most downstream station #1. The BI was the only metric that contributed to lower scores at all stations.

Table 5

Biological Criteria (BIOREF) Metric Scores, Macroinvertebrate Stream Condition Index (MSCI) Scores, and Biological Support Category for Troublesome Creek in Knox, Lewis, and Marion Counties, Fall 2009

Stream and Station Number	Sample No.	TR	EPTT	BI	SDI	MSCI	Support
Troublesome Creek #4	0918407	<b>73</b>	<b>15</b>	<b>6.4</b>	3.18	<b>14</b>	<b>P</b>
Troublesome Creek #3	0918408	<b>69</b>	<b>11</b>	<b>6.5</b>	3.05	<b>14</b>	<b>P</b>
Troublesome Creek #2	0918406	<b>57</b>	<b>12</b>	<b>7.0</b>	3.04	<b>14</b>	<b>P</b>
Troublesome Creek #1	0918405	89	24	<b>6.8</b>	<b>2.91</b>	16	F
BIOREF Score=5	--	>73	>17	<6.3	>2.99	20-16	Full
BIOREF Score=3	--	73-37	17-9	6.3-8.1	2.99-1.49	14-10	Partial
BIOREF Score=1	--	<37	<9	>8.1	<1.49	8-4	Non-

MSCI Scoring Table (gray) developed using BIOREF samples (n=11); TR=Taxa Richness; EPTT=Ephemeroptera, Plecoptera, Trichoptera Taxa; BI=Biotic Index; SDI=Shannon Diversity Index; **Bold**=metrics with less than optimum BIOREF scores.

All Troublesome Creek stations were partially supporting the AQL beneficial use in the spring (Table 6). Stations #4, #2, and #1 had MSCI scores of 14, whereas station #3 had a score of 12.

All individual metrics contributed to the impairment of stations in the spring (Table 6). The TR and EPTT were below the optimum scoring range at all stations in the spring. The BIs were above the optimum range at stations #3 and #2, which suggests potential organic influence or disturbance may have contributed to the community assemblages. The SDI was below optimum at stations #4, #3, and #1.

Table 6  
 Biological Criteria (BIOREF) Metric Scores, Macroinvertebrate Stream Condition Index (MSCI) Scores, and Biological Support Category for Troublesome Creek in Knox, Lewis, and Marion Counties, Spring 2010

Stream and Station Number	Sample No.	TR	EPTT	BI	SDI	MSCI	Support
Troublesome Creek #4	1004057	<b>69</b>	<b>11</b>	5.8	<b>2.92</b>	14	P
Troublesome Creek #3	1004058	<b>68</b>	<b>10</b>	<b>6.5</b>	<b>3.18</b>	12	P
Troublesome Creek #2	1004059	<b>69</b>	<b>10</b>	<b>6.7</b>	3.23	14	P
Troublesome Creek #1	1004060	<b>77</b>	<b>13</b>	6.2	<b>3.18</b>	14	P
BIOREF Score=5	--	>77	>17	<6.3	>3.21	20-16	Full
BIOREF Score=3	--	77-39	17-9	6.3-8.1	3.21-1.61	14-10	Partial
BIOREF Score=1	--	<39	<9	>8.1	<1.61	8-4	Non-

MSCI Scoring Table (gray) developed using BIOREF samples (n=7); TR=Taxa Richness; EPTT=Ephemeroptera, Plecoptera, Trichoptera Taxa; BI=Biotic Index; SDI=Shannon Diversity Index; **Bold**=metrics with less than optimum BIOREF scores.

Six families were among the top seven DMFs at stations in the fall of 2009 (Table 7). Chironomidae (midge) was the most dominant at stations #4, #3, and #2, while Hydropsychidae (caddisfly) was in that group at station #1. The second most dominant group of families included Hydropsychidae, Baetidae, Tubificidae, and Chironomidae at stations from upstream to downstream (#4 through #1), respectively. The third most dominant group of families included Leptophlebiidae, Hydropsychidae, Baetidae, and Caenidae from upstream to downstream. Physidae, Hyalellidae, Heptageniidae, Elmidae, and Coenagrionidae were among the six remaining families present at some of the stations.



Chironomidae, Hydropsychidae, and Tubificidae followed a trend in the fall (Table 7). Chironomidae made up 33.5 percent of the total number of taxa at station #4, and increased by seven percent at station #3 before stabilizing at station #2. Simultaneously, Hydropsychidae decreased from 19 percent at station #4 to 11 and seven percent at stations #3 and #2, respectively, before increasing notably at station #1. The percentage of Tubificidae at station #2 was over three times higher than all other stations.

Table 7  
 Dominant Macroinvertebrate Families (DMF) as a Percentage of the Total  
 Number of Individuals per Station for Troublesome Creek Stations in  
 Knox, Lewis, and Marion Counties, Fall 2009

Family	Troublesome Creek #4	Troublesome Creek #3	Troublesome Creek #2	Troublesome Creek #1
Chironomidae	33.5	<b>49.3</b>	<b>34.3</b>	<b>20.9</b>
Hydropsychidae	19.8	<b>11.4</b>	<b>7.0</b>	<b>28.1</b>
Leptophlebiidae	8.1	4.6	3.4	-
Baetidae	6.2	11.6	11.2	-
Caenidae	5.0	-	10.5	18.8
Tubificidae	4.0	4.4	<b>15.8</b>	3.7
Physidae	3.7	3.1	-	-
Hyaellidae	-	3.0	-	-
Heptageniidae	-	-	5.3	3.6
Elmidae	-	-	-	7.4
Coenagrionidae	-	-	-	2.6

Eleven families were found in the top seven DMFs at stations in the spring (Table 8). Chironomidae (midge) was the dominant family at all stations. Simuliidae (black fly) was the second most abundant group at all stations. Caenidae (mayfly) was third highest at stations #4, #2 and #1, while Tubificidae (aquatic worm) was found in that group at station #3. Limnephilidae, Hydropsychidae, Baetidae, Chaoboridae, Heptageniidae, Perlidae, and Elmidae made up the remainder of these 11 families found at some stations.

Chironomidae and Simuliidae followed a similar trend in the spring 2010 samples (Table 8). Chironomidae made up 46.9 percent of the total number of taxa at station #4, increased by over 17 percent at station #3, then declined by 10 percent at station #2. Chironomids made up a similar percentage of station #4 and #1 samples. Conversely, the percentage of Simuliidae was higher at station #4 upstream, decreased by nearly 15 percent at stations #3 and #2, and then increased again at station #1.

Table 8  
 Dominant Macroinvertebrate Families (DMF) as a Percentage of the Total  
 Number of Individuals per Station for Troublesome Creek Stations in  
 Knox, Lewis, and Marion Counties, Spring 2010

Family	Troublesome Creek #4	Troublesome Creek #3	Troublesome Creek #2	Troublesome Creek #1
Chironomidae	46.9	<b>64.5</b>	<b>56.9</b>	44.7
Simuliidae	33.3	<b>16.6</b>	<b>15.7</b>	23.3
Caenidae	3.2	1.7	8.0	8.0
Limnephilidae	2.7	1.0	-	-
Tubificidae	2.4	5.5	3.6	5.3
Hydropsychidae	2.2	1.7	-	-
Baetidae	1.5	2.4	2.7	-
Chaoboridae	-	-	3.5	2.3
Heptageniidae	-	-	1.9	-
Perlidae	-	-	-	4.1
Elmidae	-	-	-	2.5

### 3.3.2 Physicochemical Water Quality Parameters

Although water quality parameters were generally unremarkable during sampling in the fall of 2009 (Table 14), nutrients and chloride were detected in the water grab samples. Total nitrogen, ammonia, total phosphorus, and chloride were present in low concentrations at all stations. Nitrate was present at stations #3, #2, and #1. Discharge increased 10-fold between the upstream station #4 and the downstream station #1 from approximately 3 cfs to over 30 cfs.

Water quality parameters also were generally unremarkable during the spring 2010 sample season (Table 10). Total nitrogen, nitrate, ammonia, total phosphorus, and chloride were present in low concentrations at all stations in the spring of 2010. Discharge increased 10-fold from approximately 9 cfs at the upstream station #4 to over 90 cfs at the downstream station #1.

Table 9  
 Physicochemical Water Parameters for Troublesome Creek Stations,  
 Knox, Lewis, and Marion Counties, Fall 2009

Station> Variable/ Date	Troublesome Creek #4 10-01-09	Troublesome Creek #3 10-01-09	Troublesome Creek #2 09-30-09	Troublesome Creek #1 09-30-09
Sample Number	0912056	0912057	0912055	0912054
pH (Units)	8.1	7.7	7.8	7.9
Temperature (°C)	14.0	15.0	14.0	14.0
Conductivity (µS/cm)	176	193	187	199
Dissolved O <sub>2</sub>	7.60	7.37	6.04	8.10
Discharge (cfs)	3.63	8.11	15.41	33.90
NFR	26.0	57.0	40.0	31.0
Turbidity (NTUs)	27.4	54.7	28.0	30.5
Total Nitrogen	0.50	0.57	0.62	0.76
Nitrate+Nitrite-N	<0.05	0.05	0.09	0.25
Ammonia-N	0.18	0.18	0.18	0.17
Chloride	6.67	7.84	7.60	7.54
Total Phosphorus	0.10	0.10	0.09	0.10

(Units mg/L unless otherwise noted; **Bold**=Out of WQS acceptable range or trend)

Table 10  
 Physicochemical Water Parameters for Troublesome Creek Stations,  
 Knox, Lewis, and Marion Counties, Spring 2010

Station> Variable/ Date	Troublesome Creek #4 4-6-10	Troublesome Creek #3 4-6-10	Troublesome Creek #2 4-6-10	Troublesome Creek #1 4-6-10
Sample Number	1000904	1000905	1000906	1000907
pH (Units)	7.8	7.8	7.8	7.8
Temperature (°C)	15.9	16.6	16.7	17.2
Conductivity (µS/cm)	299	332	325	278
Dissolved O <sub>2</sub>	9.08	9.30	9.30	9.30
Discharge (cfs)	9.40	21.72	36.34	90.97
NFR	18.0	25.0	28.0	38.0
Turbidity (NTUs)	30.1	31.0	29.8	37.3
Total Nitrogen	0.92	0.69	0.83	1.07
Nitrate+Nitrite-N	0.13	0.02	0.09	0.25
Ammonia-N	0.17	0.13	0.15	0.17
Chloride	14.3	15.1	13.3	9.74
Total Phosphorus	0.08	0.08	0.08	0.10

(Units mg/L unless otherwise noted; **Bold**=Out of WQS acceptable range or trend)

### **3.4 Diel Dissolved Oxygen Stressor Study**

A significant rain event resulting in over 3.5 inches of precipitation occurred on August 16 and 17, 2009 while dataloggers were deployed (Appendix D). Smooth silt reached the top of the bank, which indicated that flow levels may have increased 5-10 feet from base flow. Despite high flows, dataloggers remained in place at all stations except #4. The datalogger at this site was displaced, but continued to record from its new location. Conductivity decreased substantially on August 16 and 17, 2009, which corresponded with the time of increased flow (Appendix C).

Dataloggers measured dissolved oxygen concentrations and temperature every 15 minutes at all stations for 14 days (Appendix C). The mean dissolved oxygen concentration at station #4 was 5.72 mg/L, and below WQS (5.0 mg/L) for 38.9 percent of the samples. The mean dissolved oxygen at station #3 was 7.13 mg/L, and 1.8 percent of the samples were below WQS. The mean at station #2 was 6.68 mg/L, and 9.8 percent of the samples were below WQS. The mean at station #1 was 6.91, with only 0.4 percent of the samples below WQS. It is possible that when dissolved oxygen concentrations are below the WQS for longer periods of time, such as was found at station #4 and possibly station #2, the macroinvertebrate community composition is affected.

Temperature was recorded and a range was examined for all stations (Appendix C). The temperature was approximately 22°C during the majority of the time and had a daily range from 19°C to 23°C at station #4. Temperature increased on August 16, 2009, likely due to the flood water mentioned earlier, then decreased to approximately 22°C on the August 17. Temperature ranged from 19°C to 25°C at both station #3 and station #2. Temperature ranged from 19°C to 27°C at station #1. Temperatures usually fluctuated only 1-2°C during a diel period, but as much as 8°C over the entire 14-day deployment.

Conductivity was lower upstream than downstream and fluctuated during deployment (Appendix C). Conductivity was in the low to mid 300s  $\mu\text{S}/\text{cm}$  range at station #4. The range was low to mid 400s at stations #3, #2, and #1. Conductivity dropped to within the mid 100s  $\mu\text{S}/\text{cm}$  range at all stations on August 16 and 17 when the watershed received a 3.5 inch rain (Appendix C; Appendix D).

## **4.0 Discussion**

The results of the stream habitat assessment and channel morphology, biological assessment, and diel dissolved oxygen stressor study will be discussed in this section.

### **4.1 Stream Habitat and Channel Morphology**

Habitat at three stations (#4, #3, and #2) was not comparable to reference conditions. Stations #3 and #2 had the lowest scores due in part to heavy sand deposited on riffles. Available epifaunal substrate, embeddedness, heavy sediment deposition, riffle quality, bank stability, and vegetative protection all were habitat assessment parameters that contributed to the low scores at all stations. Channel morphology measurements illuminated unstable to moderately unstable bank conditions and a narrow riparian corridor at the upstream stations that may have contributed to the poor habitat quality.

Land cover was dominated by cropland in the upper two stations with less forest than the remaining stations or the EDU as a whole. The amount of forest at the two downstream stations was similar to the overall EDU. This difference in land use may have contributed to the scores and the quality of the community. Appropriate Best Management Practices (**BMPs**) may improve the quality of instream habitat within the upper stations.

Station #1 was the only sample station with habitat comparable to reference conditions. Despite the relatively high score, the station had heavy sediment deposition and little bank vegetation.

## **4.2 Biological Assessment**

The biological assessment includes analyses of the macroinvertebrate community and comparison of the physicochemical water quality among stations and with water quality standards.

### **4.2.1 Macroinvertebrate Community**

Three of the four stations were consistently partially supporting the AQL beneficial use. Only station #1 was fully supporting the AQL beneficial use during one of the two seasons of study (fall).

In the fall, three of the four stations were partially supporting of the AQL, with only station #1 fully supporting the AQL beneficial use. The TR and EPTT were near the optimum range at station #4 and within that range at station #1; however, these metrics decreased substantially at stations #3 and #2. The BI was slightly higher than the optimum at station #4, but the BI was greater still at stations #3, #2, and #1. While the high BIs suggest an organic influence or disturbance may have contributed to the macroinvertebrate community at all stations, this BI trend suggests that stations #3 and #2 were affected to a greater extent than stations #4 and #1 in the fall.

In the spring, a similar trend appeared. While all stations were partially supporting the beneficial use, the BI was again higher at stations #3 and #2, suggesting that organic influences may affect these stations. The BI was lower and within the optimum range at stations #4 and #1, suggesting that organic influences were probably not contributors to the community assemblage at these stations in the spring.

The three upstream stations (#4, #3, and #2) were consistently impaired. Stations #4, #3 and #2 had consistently lower taxa richness and fewer EPTT. However, stations #3 and #2 were usually lower in taxa richness and EPTT than station #4. The BI was also consistently higher at stations #3 and #2, which suggests the possibility of organic influence or other disturbance that may have contributed to the community structure. The high BI at stations #4 and #1 in the fall and low BI in those stations in the spring shows that these stations were not necessarily affected by organics on a consistent basis. It appears that station #4 was affected by some other influence (see Section 4.3). Station #1 may show effects from upstream influence such as organic influences. It may be that the

effects observed in the fall were subdued because of increased spring discharge. Figure 2 shows National Pollutant Discharge Elimination System (**NPDES**) permitted point and non-point sources, which may or may not have contributed to effects on stations.

Trends in the DMFs may explain, at least in part, why the scores were affected and help to identify potential sources for impairment. When compared to station #4 in the fall, the percentage of generally tolerant Chironomidae increased by over 15 percent at station #3 before stabilizing at station #2 and further decreasing at #1. Simultaneously, generally intolerant Hydropsychidae decreased at both stations #3 and #2 before increasing at station #1. Tolerant Tubificidae increased sharply at station #2, which potentially helped keep the MSCI score down. This pattern illustrates that stations #3 and #2 either may have been affected to a greater extent than even station #4 (upstream) or the pattern was due to different factors than were found in station #4.

In the spring, a similar trend occurred. All stations contained over 40 percent generally tolerant Chironomidae, which is somewhat common among spring samples. However the percentage of Chironomidae increased significantly at stations #3 and #2 compared to the upstream station, while intolerant Simuliidae decreased, which may suggest a potential influence upstream of (or within) station #3. This taxa shift may have been a result of poor habitat, as the simuliid preferred habitat is coarse substrate (riffle), and the riffles were covered with sand at these two stations.

Interestingly, a sharp decline in sensitivity began at station #3 and usually included station #2 during both seasons, which suggests that some continuous source for impairment may be present at or just upstream of station #3. Alternatively, the downstream stations may contain influences similar to station #3. Consistently high BIs at these stations suggest that organic influences may have contributed to the community structure. The possibility of organic influences should be considered as potential sources of impairment, followed by identification and monitoring as appropriate. Alternatively, the habitat contained heavy sand substrates and stream bank conditions were moderately unstable to unstable. These habitat factors also may have contributed to the observed macroinvertebrate community structure.

#### **4.2.2 Water Quality**

All water parameters were relatively similar among stations during both seasons and were within WQSs (MDNR 2009c) when applicable. Nutrients were detected in low concentrations at all stations. Total nitrogen, ammonia, and total phosphorus were detected at all stations, while nitrate+nitrite-N was detected at all stations, except #4 in the fall. Instream nutrient concentrations may be due to runoff from land-applied fertilizer, animal use, or wastewater influence in the watershed upstream from the stations or within each reach.

Stream discharge increased 10-fold from upstream to downstream during both seasons. Station #4 is closely downstream from a PL566 retention pond. The landowners at

station #4 said that the stream used to flow for only short periods after rain prior to construction of the pond. However, since the pond was constructed, the stream maintains flow for longer periods. Extended duration of flow through seepage from the ponds/lakes is one of the intended purposes of these flood control structures. Streams downstream from PL566 structures were also found to be shallower and narrower than streams without flood control structures, which again suggests that they meet their designed purpose (MDNR 2011). The periods of flow may be longer since the PL566 pond was constructed, but low flow upstream may have influenced the macroinvertebrate composition.

#### **4.3 Diel Dissolved Oxygen Stressor Study**

The two week dissolved oxygen stressor study in August 2009 identified a potential reason for impairment at a Troublesome Creek station. Flow, temperature, and conductivity were used to support conclusions. Other stations were probably not affected in the same manner.

During the stressor study, station #4 had a mean dissolved oxygen concentration of 5.72 mg/L and was below WQSs for 39 percent of the samples. Dissolved oxygen was below WQSs for an extended period during the deployment, until the watershed received 3.5 inches of rain on August 16, 2009 (Appendix D). On August 16 and 17, 2009 conductivity dropped from the 300  $\mu\text{S}/\text{cm}$  range to the low to mid 100  $\mu\text{S}/\text{cm}$  range, indicating that the rain event substantially increased flow in the stream (Appendix C). As the conductivity decreased, the dissolved oxygen concentration increased to levels above WQSs at station #4. Concentrations remained above WQSs for the remainder of the study. This trend clearly suggests dissolved oxygen concentrations are related to flow at station #4 and that impairment may be due to low flow during stressful periods.

At station #4 flow and impairment are functions of watershed size and location. The absence of water movement was thought to have resulted in low dissolved oxygen in Troublesome Creek in the past (SCS 1977). The most upstream station has 10-fold less discharge than the most downstream station and flow is normally limited by outflow from a PL566 flood control structure located just upstream. As mentioned earlier, the stream at station #4 used to flow only for short periods after rain events before construction of the PL566 pond. Since the PL566 headwater pond was built, the stream maintains flow for longer periods of time, which is one of the desired effects from a PL566 flood control structure (MDNR 2011). In this study, the dissolved oxygen concentrations remained above WQSs and conductivity remained low for the rest of the study (eight to nine days), which suggested that flow was sustained for (at least) that period of time. The PL566 headwater pond is apparently working as intended to increase the time period with flow in the stream and subsequently dissolved oxygen should increase during those times. However, flow is low much of the time and dissolved oxygen is below WQS during stressful times. While a slight organic influence was potentially identified based on the BI metric at station #4 in the fall, low dissolved oxygen due to low flow is a probable contributor to the impaired macroinvertebrate community at station #4.

The remaining stations (#3, #2, and #1) had periods when dissolved oxygen was below the WQS, but it was lower for much less time than station #4. Station #3 was only below WQSs 1.8 percent of the time. Station #2 was below for 9.8 percent of the time, which is consistent with earlier studies (USGS/MDNR study site number 2). Station #1 dissolved oxygen was only below the WQS for 0.4 percent of the time. Graphs show that dissolved oxygen fluctuated daily at these three stations, as opposed to the long period below WQSs noted at station #4 (Appendix C).

The short daily fluctuations would be expected in a larger stream with greater autotrophic activity. The temperature changed very little, which indicates that the capacity to hold dissolved oxygen did not change significantly. Alternatively, this pattern could reflect periodic flow input from upstream point or non-point sources. Several point and non-point sources are also found upstream and downstream of station #3 which could be sources for flow. General discharge was much higher at these downstream stations than the headwater station, which suggests that flow may have not been the primary limiting factor for the periods of low dissolved oxygen. It does not appear that flow limited the dissolved oxygen concentrations to below WQSs at these three stations or that dissolved oxygen concentrations were low for long enough periods to alter the community composition at stations #3, #2, and #1.

## **5.0 Summary**

Stream habitat was not comparable to reference conditions at three of the four stations (#4, #3, and #2). All habitat assessment factors contributed to the poor overall habitat score. These factors include epifaunal substrate, embeddedness, sediment deposition, riffle quality, bank stability, and vegetative protection. Heavy sand substrates at stations #3 and #2 covered riffles. Poor stream habitat may have contributed to the macroinvertebrate community at these stations.

Three of the four stations (#4, #3, and #2) were partially supporting the AQL designated use during both seasons, whereas station #1 was only impaired during the spring. The macroinvertebrate communities were consistently smaller with fewer sensitive taxa than the BIOREF samples and, in the case of stations #3 and #2, taxa were consistently more tolerant of organic influences. Habitat was poor at the same three stations with heavy sand substrates, which may have contributed to impairment. However, high BI values suggest organic influences may have contributed, especially at stations #3 and #2.

Water quality parameters were not exceptionally high and did not exceed WQSs. Nutrients and organic indicators were detected in low concentrations, which may be attributed to land use or upstream point sources.

At station #4, dissolved oxygen concentrations were apparently related to low flow and these low concentrations may have contributed to the altered community composition. Dissolved oxygen was below the WQS for over 38 percent of the datalogger deployment period. A rain event increased flow and, subsequently, dissolved oxygen increased to concentrations above the WQS. Concentrations remained above the WQS for the



remainder of the study, probably due to extended flow periods caused by a PL566 pond just upstream. However, the stream flow is dependent on rainfall in this headwater reach and dissolved oxygen is likely to be below the WQS for extended periods.

Stations #3 and #2 were consistently impaired and maintained high BI values, which indicates macroinvertebrate communities that are generally more tolerant of organic influences that may be present at these stations. Unlike upstream, dissolved oxygen at stations #3 and #2 was below WQSs for short daily periods, which suggests that flow was not the primary cause of impairment. Station #1 was fully supporting of the AQL designated use in the fall, but not in the spring. Flow and dissolved oxygen concentrations were higher, indicating that they were not primary contributors to impairment in the spring.

## **6.0 Conclusion**

The objectives were met and the null hypotheses were examined. The stream habitat quality was assessed and channel morphology was detailed. The protection of aquatic life beneficial use of the macroinvertebrate community was assessed. The physicochemical water quality was assessed. Important diel dissolved oxygen concentrations were identified.

- 1) The stream habitat quality was not comparable to reference conditions of the Central Plains/Cuivre/Salt EDU at three of the four stations.
- 2) Macroinvertebrate communities were similarly impaired among reaches of Troublesome Creek from upstream to downstream, with the exception of station #1 in the fall.
- 3) Water quality is similar from upstream to downstream and within acceptable Missouri Water Quality Standards (**WQSs**; MDNR 2009c).
- 4) Daily (diel) dissolved oxygen concentrations fluctuated during a rain event and were not within WQSs for much of the time at station #4. Dissolved oxygen was below WQSs for much less time at the remaining downstream stations.

## **7.0 Recommendations**

- Use of proper BMPs may increase the quality of instream habitat within the upper stations.
- Possible organic influences should be considered, identified, and monitored.

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## **Appendix A**

Biological Assessment and Stressor Study Plan for Troublesome Creek  
Knox, Lewis, and Marion Counties  
July 10, 2009

**Missouri Department of Natural Resources  
Field Services Division  
Environmental Services Program  
Water Quality Monitoring Section**

**Biological Assessment and Stressor Study Plan for  
Troublesome Creek in Knox, Lewis, and Marion Counties**

**July 10, 2009**

**1.0 Background**

The upper reach of Troublesome Creek (WBID 0074) begins approximately two miles southwest of Knox City, Missouri in Knox County (Figure 1). The stream reach is designated Class C. The Class C segment flows approximately 34 miles through southwest Lewis and northwest Marion counties and then continues as a four mile reach of Class P (WBID 0073; in pink) section one mile south of Hester, Missouri. Class C streams may cease flow but maintains pools during periods of drought. Troublesome Creek has designated beneficial uses for protection of aquatic life and human health—fish consumption (**AQL**); livestock and wildlife watering (**LWW**); and whole body contact (**WBC**), category B.

The 34 miles of upper Troublesome Creek are on the 2004/2006 Section 303(d) list of impaired waters (MDNR 2009a). The reason for listing is potential low dissolved oxygen. The impaired beneficial use is for AQL. No source is given for the impairment; however the absence of water movement has resulted in low dissolved oxygen in the past (SCS 1977). It is our intention to conduct a biological assessment, stream habitat assessment, and stressor study on Troublesome Creek in Knox, Lewis, and Marion counties, Missouri. The stressor study will include continuous dissolved oxygen concentration monitoring within the stream for an extended period. The goal will be to determine if Troublesome Creek is impaired.

This study was requested by the Water Pollution Protection (**WPP**), of the Division of Environmental Quality (**DEQ**), in the MDNR. The study will be conducted by the Field Services Division (**FSD**), Environmental Services Program (**ESP**), Water Quality Monitoring Section (**WQMS**), and Chemical Analysis Section (**CAS**).

**2.0 Objectives**

1. Assess the biological (macroinvertebrate) integrity and water quality of Troublesome Creek.
2. Determine the quality of the stream habitat.
3. Identify the diel dissolved oxygen range.

## **2.1 Tasks**

1. Conduct a biological assessment on Troublesome Creek.
2. Conduct a stream habitat assessment.
3. Conduct dissolved oxygen studies at each station.

## **2.2 Null Hypotheses**

Biological metrics and MSCI scores will be similar between stations, and to optimum Wadeable/Perennial stream biological criteria.

Physicochemical water quality will be similar at all stations, and parameters will meet the Water Quality Standards (**WQS**) of Missouri (MDNR 2005c).

Dissolved oxygen concentrations will be similar between stations and within acceptable WQS levels throughout the day and night.

## **3.0 Study Design**

The study area, biological assessment, stream habitat assessment, and dissolved oxygen studies are described below.

### **3.1 Study Area**

The study area and station locations for the 2009-2010 Troublesome Creek (WBID 0074) project are shown in Figure 1. Four stations were allocated for this project. Stations were positioned approximately 5 to 10 miles apart starting from the upper reach of 0074 and ending approximately one mile upstream of the end of 0074. Locations are identified and described in Table 1. One station is located in Knox County; two in Lewis County; and one in Marion County. Stations are identified by number, increasing from downstream to upstream. Troublesome Creek is located in the Central Plains/Cuivre/Salt, Ecological Drainage Unit (**EDU**).

### **3.2 Biological Assessment**

A biological assessment consists of macroinvertebrate community and physicochemical water evaluation.

#### **3.2.1 Macroinvertebrate Sampling and Analyses**

As specified in the Semi-quantitative Macroinvertebrate Stream Bioassessment Project Procedure (**SMSBPP**, MDNR 2003c), macroinvertebrates will be sampled from three specific habitats. These target habitats are based on stream type. Troublesome Creek is considered a riffle/pool dominant stream in which, flowing water over coarse substrate; non-flowing water over depositional substrate; and rootmat habitats will be sampled. Macroinvertebrates will be subsampled according to the SMSBPP, and identified to specific taxonomic levels (MDNR 2005a) in order to calculate metrics in a standardized fashion (MDNR 2002; MDNR 2003c; MDNR 2005a).

Macroinvertebrate community data will be analyzed using three strategies. Macroinvertebrate Stream Condition Index scores, individual biological criteria metrics, and dominant macroinvertebrate families will be examined and compared between test and reference streams.

Macroinvertebrate data will be entered in a Microsoft Access database in accordance with Quality Control Procedures for Data Processing, MDNR-WQMS-214 (MDNR 2003b). Data analysis is automated within the Access database. According to the SMSBPP, a total of four standard metrics will be calculated for each station: Taxa Richness (TR); Ephemeroptera, Plecoptera, Trichoptera Taxa (EPTT); Biotic Index (BI); and the Shannon Diversity Index (SDI).

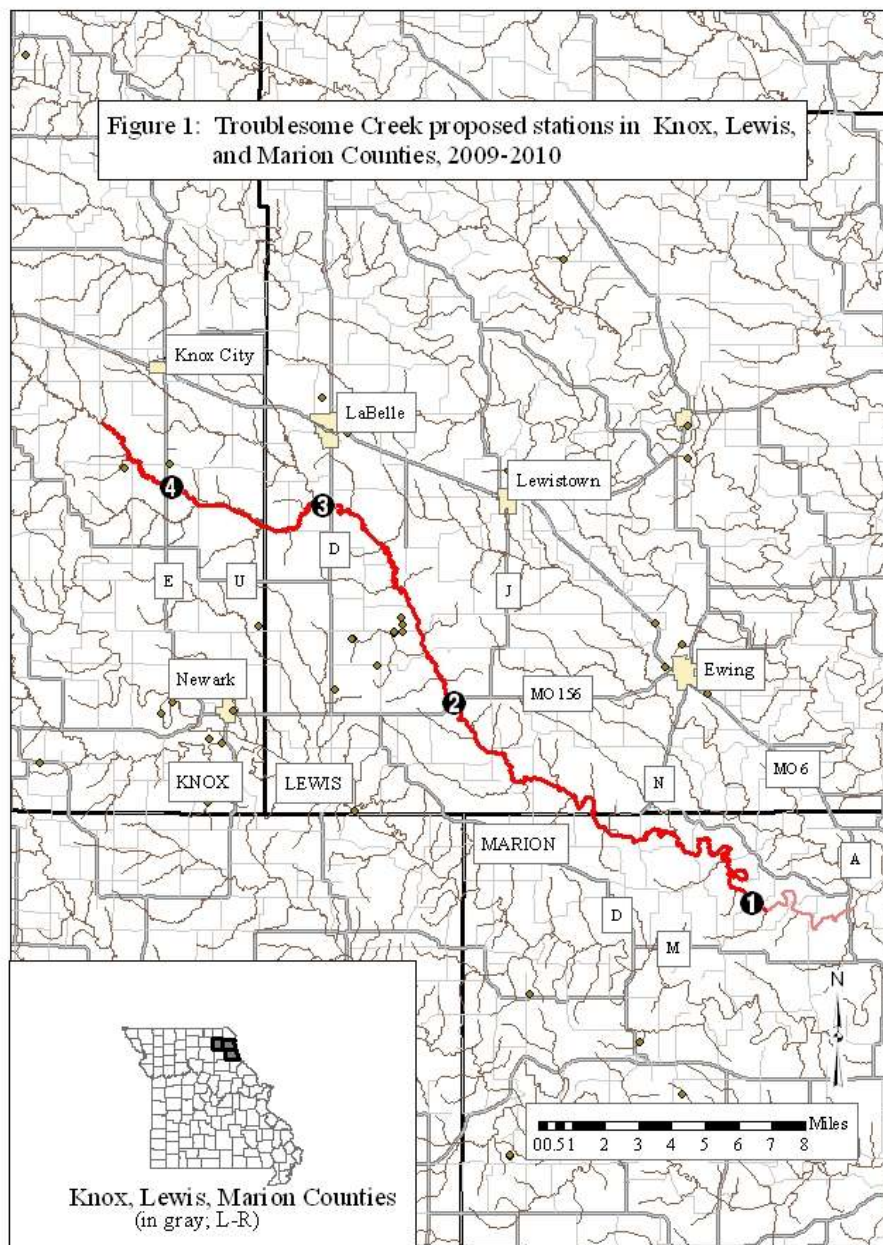
Table 1  
Troublesome Creek Station Locations and Descriptions

Station	County	Location STR; UTM	Description
Troublesome Creek #4	Knox	NW ¼ sec. 15, T. 61 N., R. 10 W. UTM 0584726E 4438708N	Downstream Hwy E bridge
Troublesome Creek #3	Lewis	SW ¼ sec. 16, T. 61 N., R. 09 W. UTM 0592640E 4437577N	Upstream Hwy D bridge
Troublesome Creek #2	Lewis	SE ¼ sec. 13, T. 60 N., R. 09 W. UTM 0598716E 4428153N	Upstream MO Hwy 156 bridge
Troublesome Creek #1	Marion	NE ¼ sec. 16, T. 59 N., R. 07 W. UTM 0612969E 4418437N	McPike Access, Missouri Department of Conservation

### 3.2.2 Physicochemical Water Sampling and Analyses

Physicochemical water samples will be handled according to the appropriate MDNR, Standard Operating Procedure (**SOP**) and/or Project Procedure (**PP**) for sampling and analyzing physicochemical water samples. Results for physicochemical water parameters will be examined by season and station.





red = impaired 34 miles (WBID 0074)  
pink = lower 3.5 miles (WBID 0073)  
diamond = outfall

Fall 2009 and spring 2010 physicochemical water samples will either be measured *in-situ* or collected as grab samples and analyzed at the Environmental Services Program laboratory. Temperature (C°), pH, conductivity (uS), dissolved oxygen (mg/L), and discharge in cubic feet per second (**cfs**) will be measured *in situ*. Grab samples will be collected and handled according to the SOP MDNR-FSS-001 Required/Recommended Containers, Volumes, Preservatives, Holding Times, and Special Sampling Considerations (MDNR 2009b). All samples will be kept on ice during transport to ESP. Turbidity samples (NTU) will be measured and recorded in the WQMS biology laboratory. The ESP, Chemical Analysis Section (**CAS**) will conduct analyses for non-filterable residue (NFR = TSS), ammonia-nitrogen (mg/L), nitrate+nitrite-nitrogen (mg/L), total nitrogen (mg/L), chloride (mg/L), and total phosphorus (mg/L).

Physicochemical results will be compared between stations from upstream to downstream, as well as with Missouri's WQS (MDNR 2005b). Interpretation of acceptable limits in the WQS may be dependent on a stream's classification and its beneficial-use designation (MDNR 2005b). Furthermore, acceptable limits for some parameters, such as dissolved metals, may be dependent on the rate of exposure. These exposure or toxicity limits are based on the lethality of a toxicant given long-term exposure (chronic toxicity, **c**) or short-term exposure (acute toxicity, **a**).

Stream flow will be measured at each station using a Marsh-McBirney Flowmate™ flow meter. Velocity and depth measurements will be recorded at each station according to SOP MDNR-WQMS-113 Flow Measurement in Open Channels (MDNR 2003a).

Water quality data will be entered in the ESP Laboratory Information Management System (LIMS) database. Results of the study will be summarized and interpreted in report format.

### **3.3 Stream Habitat Assessment**

Stream habitat will be assessed as outlined in the Stream Habitat Assessment Project Procedure (**SHAPP**) for Riffle/Pool prevalent streams (MDNR 2003d). The SHAPP assesses the quality of the stream habitat and the potential influence habitat might have on the aquatic biological community. Stream habitat quality is scored for each station and the test scores are compared with mean SHAPP reference station scores. Stream habitat scores will also be compared between tributaries.

As another indicator of stream condition, channel measurements and observations will be recorded at ten transects within each station. Channel-width, wetted-width, depth measurements, bank conditions, type of flow, and riparian corridor condition will be recorded at each transect. Channel-width includes the distance (feet) between the lower banks, including bars. The wetted-width includes only the wetted portion of the stream. Water depth (inches) will be measured at three locations ( $\frac{1}{4}$ ,  $\frac{1}{2}$ , and  $\frac{3}{4}$  of wetted-width) on each transect to identify morphology. The bank stability, type of flow, and riparian corridor observations will be recorded at each transect. Data will be compiled, and potentially tested between stations.

### **3.4 Dissolved Oxygen Study**

Dissolved oxygen will be monitored at the four stations using dissolved oxygen dataloggers. Four Manta™ Water Quality Multiprobes, (Eureka Environmental Engineering, Austin, Texas) using the standard operation procedure (SOP), describing deployment, recovery, and download procedures, along with quality control procedures developed by the WQMS (draft). The dataloggers will be in place for two weeks in late July or August to identify dissolved oxygen concentrations throughout the day and night. Time of deployment will document dissolved oxygen levels during extreme conditions of low flow and high water temperature. Data will be graphed to illustrate fluctuations in diel concentration, and to identify conformity with the WQS.

### **4.0 Quality Control**

Quality control will be used as stated in the MDNR Standard Operating Procedures and Project Procedures.

### **5.0 Literature Cited**

Missouri Department of Natural Resources (MDNR). 2002. Biological Criteria for Wadeable/Perennial Streams of Missouri. Missouri Department of Natural Resources, Environmental Services Program, P.O. Box 176, Jefferson City, Missouri 65102. 32 pp.

Missouri Department of Natural Resources. 2003a. Flow Measurements in Open Channels. MDNR-WQMS-113. Missouri Department of Natural Resources, Environmental Services Program, P.O. Box 176, Jefferson City, Missouri. 9 pp.

Missouri Department of Natural Resources. 2003b. Quality Control Procedures for Data Processing. MDNR-WQMS-214. Missouri Department of Natural Resources, Environmental Services Program, P.O. Box 176, Jefferson City, Missouri. 6 pp.

Missouri Department of Natural Resources. 2003c. Semi-quantitative Macroinvertebrate Stream Bioassessment Project Procedure. Missouri Department of Natural Resources, Environmental Services Program, P.O. Box 176, Jefferson City, Missouri. 24 pp.

Missouri Department of Natural Resources. 2003d. Stream Habitat Assessment Project Procedure. Missouri Department of Natural Resources, Environmental Services Program, P.O. Box 176, Jefferson City, Missouri. 40 pp.

Missouri Department of Natural Resources. 2005a. Taxonomic Levels for Macroinvertebrate Identifications. MDNR-WQMS-209. Missouri Department of Natural Resources, Environmental Services Program, P.O. Box 176, Jefferson City, Missouri. 30 pp.

Missouri Department of Natural Resources. 2005b. Title 10. Rules of Department of Natural Resources Division 20-Clean Water Commission, Chapter 7-Water Quality. 10 CSR 20-7.031 Water Quality Standards. pp. 10-136.

Missouri Department of Natural Resources. 2009a. EPA approved Final Missouri 2004-2006 303(d) List. Water Protection Program, Missouri Department of Natural Resources. January 22, 2009. 15 pp.

Missouri Department of Natural Resources. 2009b. Required/recommended Containers, Volumes, Preservatives, Holding Times, and Special Sampling Considerations. MDNR-ESP-001. Missouri Department of Natural Resources, Environmental Services Program, P.O. Box 176, Jefferson City, Missouri. 25 pp.

United States Department of Agriculture, Soil Conservation Service (SCS). 1977. An assessment of water quality and stream biology: Little Wyaconda-Sugar Creek, Upper and Lower Middle Fabius, Grassy and Troublesome Creek watershed. Columbia, Missouri. 287 pp.

## **Appendix B**

Macroinvertebrate Bench Sheet Report for Troublesome Creek  
Knox, Lewis, and Marion Counties  
Fall 2009– Spring 2010

(Grouped by season and station, upstream to downstream)

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [0918407], Station #4, Sample Date: 10/1/2009 10:10:00 AM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
<b>"HYDRACARINA"</b>			
Acarina	1		1
<b>AMPHIPODA</b>			
Hyaella azteca			4
<b>ARHYNCHOBDELLIDA</b>			
Erpobdellidae	13		
<b>COLEOPTERA</b>			
Dubiraphia	1	3	
Laccophilus		1	
Scirtidae		1	2
Stenelmis	30		2
<b>DECAPODA</b>			
Procambarus acutus			-99
<b>DIPTERA</b>			
Ablabesmyia			2
Anopheles			1
Ceratopogoninae		5	
Chaoborus	13	3	1
Chironomidae	2	2	1
Chrysops	5	3	
Cladotanytarsus		3	
Corynoneura		1	2
Cricotopus bicinctus	3		
Cryptochironomus	2	15	
Dicrotendipes	11	54	
Diptera	3		
Dolichopodidae	1		
Forcipomyiinae			1
Glyptotendipes			3
Hemerodromia	1		
Microtendipes	1	2	5
Nanocladius		1	6
Ormosia	2		
Paracladopelma		5	
Parakiefferiella	1	8	1
Paratanytarsus	6	2	21
Phaenopsectra	1		
Polypedilum convictum	40		3
Polypedilum fallax grp		1	
Polypedilum halterale grp	36	72	
Polypedilum illinoense grp		1	2

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [0918407], Station #4, Sample Date: 10/1/2009 10:10:00 AM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Prosimulium	7		
Pseudochironomus	1	1	
Simulium	29		
Stempellinella		2	1
Stenochironomus	1		
Tanytarsus	18	60	19
Thienemanniella			1
Thienemannimyia grp.	4	2	8
Tipula	2		
<b>EPHEMEROPTERA</b>			
Acerpenna	54		2
Baetis	22		
Caenis latipennis	13	20	32
Centroptilum		3	
Heptagenia	2		
Leptophlebiidae	4	9	92
Maccaffertium pulchellum	1		
Maccaffertium terminatum	1		
Stenacron	24	2	15
<b>HEMIPTERA</b>			
Rhagovelia	1		
<b>ISOPODA</b>			
Caecidotea	1		
<b>LIMNOPHILA</b>			
Ancylidae	2	4	3
Lymnaeidae	1	2	
Menetus		3	3
Physella	5	7	36
<b>LUMBRICINA</b>			
Lumbricina	1		
<b>ODONATA</b>			
Argia			7
Calopteryx			1
Enallagma			7
Libellula			2
<b>TRICHOPTERA</b>			
Cheumatopsyche	248	4	5
Hydroptila	1		
Nectopsyche			2
Oecetis	2	9	1
Ptilostomis		2	

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [0918407], Station #4, Sample Date: 10/1/2009 10:10:00 AM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Triaenodes			4
TUBIFICIDA			
Enchytraeidae	4		
Tubificidae	42	10	
VENEROIDA			
Pisidiidae	2	3	2



**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [0918408], Station #3, Sample Date: 10/1/2009 11:45:00 AM****NF = Nonflow; RM = Rootmat; SG = Woody Debris; -99 = Presence**

<b>ORDER: TAXA</b>	<b>NF</b>	<b>RM</b>	<b>SG</b>
<b>"HYDRACARINA"</b>			
Acarina	1	1	
<b>AMPHIPODA</b>			
Hyaella azteca	2	28	
<b>BRANCHIOBDELLIDA</b>			
Branchiobdellida		1	
<b>COLEOPTERA</b>			
Dubiraphia		4	5
Helichus lithophilus		1	
Scirtidae		3	
Stenelmis	18		
<b>DECAPODA</b>			
Orconectes immunis		1	
<b>DIPTERA</b>			
Ablabesmyia		11	5
Anopheles		3	
Ceratopogoninae	5	1	15
Chaoborus	1		1
Chironomidae	4	1	3
Cladotanytarsus			14
Corynoneura			3
Cricotopus bicinctus	4		
Cricotopus/Orthocladius	4	1	
Cryptochironomus	13		3
Cryptotendipes			1
Culex		1	
Dicrotendipes	4		1
Diptera			1
Dixella		1	
Dolichopodidae	1		
Ephydridae	1		1
Forcipomyiinae			2
Glyptotendipes	2	5	2
Labrundinia		2	1
Microtendipes	2		1
Nanocladius		5	
Parachironomus		2	
Parakiefferiella	5	1	
Paralauterborniella			2
Parametriocnemus	1		

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [0918408], Station #3, Sample Date: 10/1/2009 11:45:00 AM****NF = Nonflow; RM = Rootmat; SG = Woody Debris; -99 = Presence**

<b>ORDER: TAXA</b>	<b>NF</b>	<b>RM</b>	<b>SG</b>
Paratanytarsus	9	44	13
Phaenopsectra	1		2
Polypedilum convictum	10	1	
Polypedilum halterale grp	172		19
Polypedilum scalaenum grp	7		1
Procladius		9	1
Rheotanytarsus	3		
Saetheria	7		1
Simulium	22		
Stempellinella			13
Stictochironomus	2		1
Tanytarsus	89	50	67
Thienemanniella	1		1
Thienemannimyia grp.	18		2
Tipula	4	1	1
Tribelos			4
<b>EPHEMEROPTERA</b>			
Acerpenna	63	4	
Baetis	49		
Caenis latipennis	2	6	19
Heptageniidae		3	
Hexagenia limbata			-99
Leptophlebiidae	7	39	11
Procloeon			1
Stenacron	6	4	3
<b>HEMIPTERA</b>			
Microvelia		7	
Neoplea		1	
<b>LIMNOPHILA</b>			
Ancylidae	2	1	2
Physella		31	7
<b>MESOGASTROPODA</b>			
Hydrobiidae		1	1
<b>ODONATA</b>			
Argia		1	
Basiaeschna janata		1	
Calopteryx		1	
Gomphidae		1	3
Libellula		-99	
Plathemis	-99		
<b>TRICHOPTERA</b>			

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [0918408], Station #3, Sample Date: 10/1/2009 11:45:00 AM****NF = Nonflow; RM = Rootmat; SG = Woody Debris; -99 = Presence**

<b>ORDER: TAXA</b>	<b>NF</b>	<b>RM</b>	<b>SG</b>
Cheumatopsyche	110	4	
Nectopsyche		1	1
Oecetis	1		
Ptilostomis		1	
Triaenodes		7	
<b>TUBIFICIDA</b>			
Aulodrilus	1		3
Ilyodrilus templetoni	1		
Tubificidae	42		26
<b>UNIONIDA</b>			
Unionidae	-99		
<b>VENEROIDA</b>			
Pisidiidae	4		

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [0918406], Station #2, Sample Date: 9/30/2009 1:00:00 PM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
<b>"HYDRACARINA"</b>			
Acarina		2	2
<b>AMPHIPODA</b>			
Hyaella azteca		3	7
<b>COLEOPTERA</b>			
Dubiraphia		15	7
<b>DIPTERA</b>			
Ablabesmyia	1	2	8
Ceratopogoninae		1	1
Chaoborus	3	11	1
Chironomidae		3	
Chironomus			2
Cladotanytarsus		4	
Corynoneura		2	1
Cricotopus bicinctus	1		
Cricotopus/Orthocladius			1
Cryptochironomus		16	
Dicrotendipes		3	
Diptera	1	1	2
Glyptotendipes		2	1
Gonomyia	2		
Hemerodromia			1
Labrundinia			8
Nanocladius			4
Paratanytarsus	2	2	36
Polypedilum convictum	2		
Polypedilum halterale grp	75	8	
Polypedilum illinoense grp	2		3
Polypedilum scalaenum grp		3	
Procladius			1
Rheotanytarsus	1	1	2
Simulium	10		2
Stempellinella		8	
Stenochironomus	1		
Stictochironomus	2	6	
Tanytarsus	12	38	46
Thienemanniella	5	2	3
Thienemannimyia grp.	5	4	7
<b>EPHEMEROPTERA</b>			
Acerpenna	7		1

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [0918406], Station #2, Sample Date: 9/30/2009 1:00:00 PM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Baetis	85		7
Caenis latipennis	7	55	41
Callibaetis		1	
Centroptilum		8	1
Hexagenia limbata		9	
Leptophlebiidae	5	5	24
Stenacron	17	20	15
<b>HEMIPTERA</b>			
Corixidae		2	
Microvelia			4
Trepobates			1
<b>LIMNOPHILA</b>			
Physella			1
<b>MEGALOPTERA</b>			
Sialis		1	
<b>ODONATA</b>			
Argia	2	2	15
Gomphidae	1		
Hetaerina			1
<b>PLECOPTERA</b>			
Isoperla	1		
<b>TRICHOPTERA</b>			
Cheumatopsyche	25	4	40
Ptilostomis			2
Triaenodes			3
<b>TUBIFICIDA</b>			
Enchytraeidae	2	1	
Limnodrilus hoffmeisteri	1	2	
Tubificidae	70	80	2

# **Aquid Invertebrate Database Bench Sheet Report**

**Troublesome Cr [0918405], Station #1, Sample Date: 9/30/2009 9:50:00 AM**

**CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
<b>"HYDRACARINA"</b>			
Acarina	2	1	1
<b>ARHYNCHOBDELLIDA</b>			
Erpobdellidae		-99	
<b>COLEOPTERA</b>			
Dubiraphia	2	6	12
Dytiscidae		1	
Macronychus glabratus			5
Paracymus			1
Scirtidae			14
Stenelmis	74	2	2
Tropisternus			-99
<b>DECAPODA</b>			
Orconectes luteus	-99	-99	
<b>DIPTERA</b>			
Ablabesmyia		4	7
Ceratopogoninae	2	7	2
Chironomidae	2	3	2
Chrysops			1
Cladotanytarsus	2	2	
Corynoneura		7	
Cricotopus bicinctus	1		1
Cricotopus/Orthocladius	2		2
Cryptochironomus	3	6	
Dicrotendipes	3	2	
Diptera	2	1	
Dolichopodidae		1	
Ephydriidae		1	
Glyptotendipes		1	8
Gonomyia		5	2
Hemerodromia	1		
Labrundinia			3
Microtendipes	8	5	1
Nilotanypus			1
Paracladopelma		1	
Parakiefferiella	1	2	
Paratanytarsus	1	4	4
Phaenopsectra			1
Polypedilum convictum	23		
Polypedilum halterale grp	5	11	

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [0918405], Station #1, Sample Date: 9/30/2009 9:50:00 AM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Polypedilum scalaenum grp	4	4	
Procladius			1
Rheotanytarsus			1
Simulium	1		
Stempellinella		8	1
Stenochironomus			2
Stictochironomus	3		
Tabanus	1		
Tanytarsus	30	40	41
Thienemanniella	1		
Thienemannimyia grp.	11	3	11
Tipula	1		3
<b>EPHEMEROPTERA</b>			
Acerpenna	6		1
Baetis	17		1
Brachycercus		2	
Caenis latipennis	12	99	149
Callibaetis			1
Centroptilum		1	4
Hexagenia limbata		1	
Isonychia	1		
Leptophlebiidae	1		11
Maccaffertium pulchellum	2		
Maccaffertium terminatum	2	1	
Stenacron	30	5	10
Stenonema femoratum	1	-99	
Tricorythodes	1		
<b>HEMIPTERA</b>			
Microvelia			17
Neoplea			1
Rhagovelia			3
Trichocorixa		12	2
<b>LIMNOPHILA</b>			
Ancylidae	9	4	
Physella		4	6
<b>ODONATA</b>			
Argia	1		32
Basiaeschna janata			-99
Boyeria			1
Calopteryx		-99	10
Enallagma			4

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [0918405], Station #1, Sample Date: 9/30/2009 9:50:00 AM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Libellula		-99	-99
<b>RHYNCHOBDELLIDA</b>			
Glossiphoniidae		-99	
<b>TRICHOPTERA</b>			
Cheumatopsyche	383	1	2
Chimarra	3		
Hydropsyche	4		
Hydroptila		1	
Limnephilidae			7
Nectopsyche		1	7
Oecetis			1
Polycentropus		2	
Ptilostomis			3
Triaenodes			3
<b>TUBIFICIDA</b>			
Branchiura sowerbyi	1	1	
Enchytraeidae	1	2	2
Limnodrilus hoffmeisteri	3		
Tubificidae	20	22	5
<b>VENEROIDA</b>			
Pisidiidae	2	1	



# **Aquid Invertebrate Database Bench Sheet Report**

**Troublesome Cr [1004057], Station #4, Sample Date: 4/6/2010 11:00:00 AM**

**CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
<b>"HYDRACARINA"</b>			
Acarina		2	2
<b>AMPHIPODA</b>			
Crangonyx			2
Hyaella azteca			3
<b>ARHYNCHOBDELLIDA</b>			
Erpobdellidae		1	-99
<b>COLEOPTERA</b>			
Dubiraphia			1
Dytiscidae		2	
Scirtidae			1
Stenelmis	6		
<b>DECAPODA</b>			
Orconectes immunis		1	-99
<b>DIPTERA</b>			
Ablabesmyia			1
Ceratopogoninae		13	5
Chironomidae			2
Chrysops	1	1	
Cladotanytarsus		18	
Cricotopus bicinctus	1		3
Cricotopus/Orthocladius	14	14	21
Cryptochironomus	4	4	2
Cryptotendipes		30	
Dicrotendipes	4	2	
Diplocladius	2	1	12
Diptera		5	
Eukiefferiella	61		1
Hemerodromia			1
Hydrobaenus	2	4	6
Labrundinia			4
Nanocladius			1
Parakiefferiella			1
Paralauterborniella		3	
Parametriocnemus	1		
Paratanytarsus	1	3	7
Phaenopsectra		2	1
Polypedilum aviceps	58	3	3
Polypedilum fallax grp			3
Polypedilum halterale grp	13	33	1

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [1004057], Station #4, Sample Date: 4/6/2010 11:00:00 AM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Polypedilum illinoense grp		1	16
Polypedilum scalaenum grp		24	
Prosimulium	4	2	
Rheotanytarsus	1	1	3
Saetheria	54	5	
Simulium	282	55	44
Stictochironomus		1	
Tanytarsus	7	15	39
Thienemanniella	1		
Thienemannimyia grp.	7	4	20
<b>EPHEMEROPTERA</b>			
Acerpenna	6	2	10
Caenis latipennis		21	17
Leptophlebia	-99		-99
Leptophlebiidae		1	8
Stenacron		1	1
<b>ISOPODA</b>			
Caecidotea			2
<b>LIMNOPHILA</b>			
Ancylidae		1	
Physella		1	-99
<b>MEGALOPTERA</b>			
Nigronia fasciatus			1
<b>ODONATA</b>			
Boyeria			-99
Calopteryx			-99
Enallagma			1
Libellula			-99
<b>PLECOPTERA</b>			
Isoperla	-99		
Perlidae	5		3
<b>RHYNCHOBDELLIDA</b>			
Piscicolidae	-99	2	
<b>TRICHOPTERA</b>			
Cheumatopsyche	10		16
Isonychia		6	26
Ptilostomis			1
Triaenodes		1	4
<b>TUBIFICIDA</b>			
Enchytraeidae	3	1	1

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [1004057], Station #4, Sample Date: 4/6/2010 11:00:00 AM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Limnodrilus claparedianus		1	
Limnodrilus hoffmeisteri	4	3	1
Tubificidae	8	8	3
VENEROIDA			
Pisidiidae		2	

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [1004058], Station #3, Sample Date: 4/6/2010 12:00:00 PM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
<b>"HYDRACARINA"</b>			
Acarina	2	1	2
<b>AMPHIPODA</b>			
Hyaella azteca		1	6
<b>ARHYNCHOBDELLIDA</b>			
Erpobdellidae		-99	
<b>COLEOPTERA</b>			
Dubiraphia		3	1
Peltodytes			1
Stenelmis	3	1	
<b>DECAPODA</b>			
Orconectes			2
Orconectes immunis			2
Procambarus acutus			1
<b>DIPTERA</b>			
Ablabesmyia		2	
Ceratopogoninae	3	2	1
Chrysops	2	1	
Cladotanytarsus	1	28	1
Cricotopus bicinctus	1		2
Cricotopus/Orthocladius	27	15	28
Cryptochironomus	17	17	2
Cryptotendipes		24	
Dicrotendipes	6	6	1
Diplocladius	2	3	2
Diptera		1	
Ephydriidae	1		
Eukiefferiella	11		
Glyptotendipes			1
Hydrobaenus	18	7	2
Labrundinia			2
Nanocladius			2
Nilotanypus			2
Paracladopelma		2	
Parakiefferiella		2	1
Paralauterborniella		5	
Paratanytarsus	2	16	36
Pericoma		1	
Phaenopsectra		1	
Polypedilum aviceps	61	2	2

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [1004058], Station #3, Sample Date: 4/6/2010 12:00:00 PM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Polypedilum halterale grp	72	9	1
Polypedilum illinoense grp	5		13
Polypedilum scalaenum grp	76	9	1
Polypedilum tritum	3		
Prosimulium	1		
Protoplasia fitchii	1		
Rheotanytarsus	1	1	2
Saetheria	53	2	
Simulium	156	1	42
Stenochironomus	3		
Stictochironomus		1	
Tabanus			-99
Tanytarsus	26	55	34
Thienemanniella			1
Thienemannimyia grp.	15	2	30
<b>EPHEMEROPTERA</b>			
Acerpenna	8	1	20
Caenis latipennis	1	11	9
Leptophlebiidae			7
Stenacron	4		4
<b>ISOPODA</b>			
Caecidotea		1	1
<b>LEPIDOPTERA</b>			
Crambidae			1
<b>ODONATA</b>			
Calopteryx		-99	-99
Ischnura		2	1
<b>PLECOPTERA</b>			
Hydroperla crosbyi	1		
Perlesta	3		4
<b>RHYNCHOBDELLIDA</b>			
Piscicolidae	1	1	
<b>TRICHOPTERA</b>			
Cheumatopsyche	9		12
Ironoquia			12
Oecetis	1		
Triaenodes			1
<b>TUBIFICIDA</b>			
Enchytraeidae	1	3	
Limnodrilus claparedianus		1	

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [1004058], Station #3, Sample Date: 4/6/2010 12:00:00 PM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Limnodrilus hoffmeisteri	3	4	
Tubificidae	21	23	14

# **Aquid Invertebrate Database Bench Sheet Report**

**Troublesome Cr [1004059], Station #2, Sample Date: 4/6/2010 1:30:00 PM**

**CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
<b>"HYDRACARINA"</b>			
Acarina	6		1
<b>AMPHIPODA</b>			
Crangonyx			1
Hyaella azteca			6
<b>ARHYNCHOBDELLIDA</b>			
Erpobdellidae		-99	-99
<b>COLEOPTERA</b>			
Dubiraphia		2	3
Neoporus			3
Paracymus			1
Peltodytes			1
<b>DIPTERA</b>			
Ablabesmyia	1	2	3
Ceratopogoninae		3	3
Chaoborus	2	42	
Chironomidae	2	1	1
Chrysops	3		
Cladotanytarsus	1	54	1
Cricotopus bicinctus	7		2
Cricotopus/Orthocladius	24	2	18
Cryptochironomus	7	6	1
Cryptotendipes		9	
Dicrotendipes	3	4	1
Diplocladius	1	1	2
Diptera		1	
Eukiefferiella	7	1	
Glyptotendipes		1	
Guttipelopia		2	
Hydrobaenus	39	3	20
Labrundinia		1	3
Nanocladius			2
Paracladopelma		1	
Paralauterborniella		5	
Paraphaenocladius			1
Paratanytarsus	1	3	3
Paratendipes		1	
Phaenopsectra	1	5	3
Polypedilum aviceps	36		2
Polypedilum fallax grp		2	1

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [1004059], Station #2, Sample Date: 4/6/2010 1:30:00 PM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Polypedilum halterale grp	49	4	
Polypedilum illinoense grp	1	8	16
Polypedilum scalaenum grp	62	33	1
Rheocricotopus	1		
Rheotanytarsus	5	1	4
Saetheria	80		
Simulium	144	3	46
Stictochironomus	1		
Tanytarsus	22	30	22
Thienemanniella	1		
Thienemannimyia grp.	26	3	27
Tribelos		1	1
<b>EPHEMEROPTERA</b>			
Acerpenna	23		10
Baetis			1
Caenis latipennis	9	43	47
Heptagenia			1
Leptophlebia			2
Stenacron	8	5	10
<b>HEMIPTERA</b>			
Corixidae			1
<b>ISOPODA</b>			
Caecidotea			2
<b>LIMNOPHILA</b>			
Physella			2
<b>ODONATA</b>			
Argia			1
Boyeria			-99
Gomphidae	1		
<b>PLECOPTERA</b>			
Perlidae	10	1	1
<b>RHYNCHOBDELLIDA</b>			
Glossiphoniidae	-99		
Piscicolidae	2	2	
<b>TRICHOPTERA</b>			
Cheumatopsyche	10	1	2
Ironoquia			3
Triaenodes			1
<b>TUBIFICIDA</b>			
Enchytraeidae	5	5	1



**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [1004059], Station #2, Sample Date: 4/6/2010 1:30:00 PM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Limnodrilus claparedianus	1	1	
Limnodrilus hoffmeisteri	2	2	1
Tubificidae	27	8	3

# **Aquid Invertebrate Database Bench Sheet Report**

**Troublesome Cr [1004060], Station #1, Sample Date: 4/6/2010 3:20:00 PM**

**CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
<b>"HYDRACARINA"</b>			
Acarina	5	1	1
<b>AMPHIPODA</b>			
Hyaella azteca			4
<b>COLEOPTERA</b>			
Dubiraphia		1	4
Macronychus glabratus		1	1
Scirtidae			4
Stenelmis	20	3	
<b>DECAPODA</b>			
Orconectes luteus	1	-99	
<b>DIPTERA</b>			
Ablabesmyia		3	4
Aedes		1	1
Ceratopogoninae		9	
Chaoborus	1	25	2
Cladotanytarsus	6	2	
Corynoneura			1
Cricotopus bicinctus	1		16
Cricotopus/Orthocladius	7	6	32
Cryptochironomus	5	7	
Cryptotendipes		2	
Dicrotendipes	3	4	2
Diptera		4	
Eukiefferiella	3	1	
Glyptotendipes	1		
Hemerodromia	1		
Hydrobaenus	9	2	9
Labrundinia			16
Nanocladius	1		1
Nilotanypus	1	1	
Paracladopelma		1	
Paralauterborniella		12	2
Paratanytarsus	1	5	18
Paratendipes		1	
Phaenopsectra			2
Polypedilum aviceps	46		1
Polypedilum fallax grp		1	
Polypedilum halterale grp	24	13	
Polypedilum illinoense grp			1

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [1004060], Station #1, Sample Date: 4/6/2010 3:20:00 PM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Polypedilum scalaenum grp	20	35	3
Procladius		4	
Rheocricotopus	3		
Rheotanytarsus	2		2
Saetheria	55		
Simulium	239	6	31
Stempellinella	2		
Stictochironomus		1	
Tabanus	1	1	
Tanytarsus	19	53	24
Thienemanniella			1
Thienemannimyia grp.	12	7	12
Tipula	-99		
<b>EPHEMEROPTERA</b>			
Acerpenna	5		3
Caenis latipennis	24	27	44
Centroptilum			2
Hexagenia limbata		1	
Leptophlebia			2
Stenacron	2		6
Stenonema femoratum	1		
<b>HEMIPTERA</b>			
Corixidae		13	
Microvelia		1	2
<b>LIMNOPHILA</b>			
Ancylidae			2
Lymnaeidae			4
<b>ODONATA</b>			
Argia		2	1
Basiaeschna janata			1
Calopteryx			1
Libellulidae	1		
Progomphus obscurus		1	
<b>PLECOPTERA</b>			
Amphinemura	1		
Hydroperla crosbyi	-99		
Perlesta	40		9
<b>RHYNCHOBDELLIDA</b>			
Glossiphoniidae			1
<b>TRICHOPTERA</b>			
Cheumatopsyche	12		

**Aquid Invertebrate Database Bench Sheet Report****Troublesome Cr [1004060], Station #1, Sample Date: 4/6/2010 3:20:00 PM****CS = Coarse; NF = Nonflow; RM = Rootmat; -99 = Presence**

<b>ORDER: TAXA</b>	<b>CS</b>	<b>NF</b>	<b>RM</b>
Ironoquia			4
Nectopsyche			4
<b>TUBIFICIDA</b>			
Enchytraeidae		1	
Limnodrilus claparedianus		4	
Limnodrilus hoffmeisteri	5	8	
Limnodrilus udekemianus		1	
Tubificidae	6	39	
<b>VENEROIDA</b>			
Pisidiidae	4		1

## **Appendix C**

Dissolved Oxygen Datalogger Location and Summary Information, Graphs, and Dataset  
Troublesome Creek in Knox, Lewis, and Marion Counties  
August 11, 2009 to August 26, 2009

(Grouped from upstream to downstream)

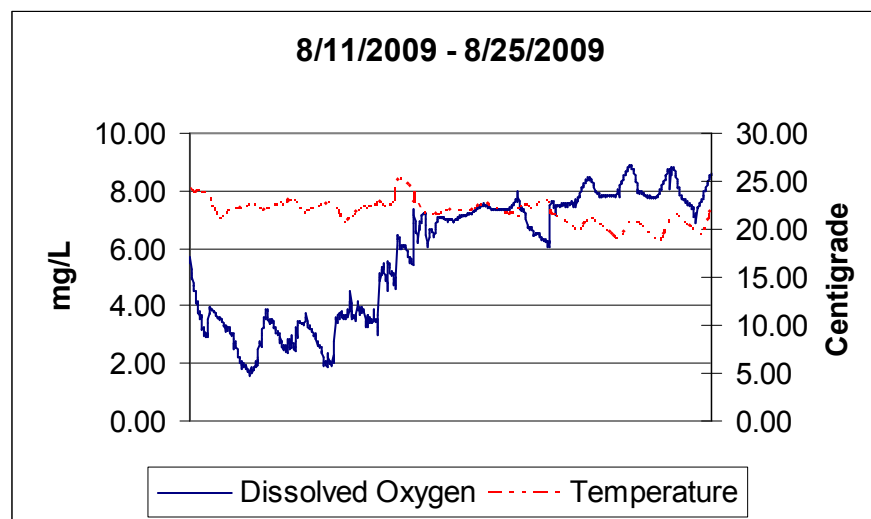
Stream	Troublesome Creek	Station	#4	County	KNOX
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Survey Start Date	08/11/09	UTM Easting	584751
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Survey End Date	08/25/09	UTM Northing	4438665
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Summary of days with minimum of 22 hours of measurements:

Average DO (mg/L):	5.72	Average Maximum DO (mg/L):	6.57	Average Minimum DO (mg/L):	4.77
% Below 5.0	38.9%	Total count of measurements:	1056		
Entire Survey:					
% Below 5.0	36.8%	Total count of measurements:	1209		



Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/11/2009	14:15	24.39	322	5.52
8/11/2009	14:30	24.47	321	5.67
8/11/2009	14:45	24.04	323	5.31
8/11/2009	15:00	24.01	324	5.14
8/11/2009	15:15	23.99	324	5.09
8/11/2009	15:30	23.96	323	4.94
8/11/2009	15:45	24.02	323	4.98
8/11/2009	16:00	23.98	323	4.79
8/11/2009	16:15	23.95	323	4.73
8/11/2009	16:30	24.04	323	4.70
8/11/2009	16:45	23.92	324	4.57
8/11/2009	17:00	23.96	324	4.52
8/11/2009	17:15	23.83	324	4.49
8/11/2009	17:30	23.93	324	4.42
8/11/2009	17:45	23.93	324	4.17
8/11/2009	18:00	23.92	324	4.08
8/11/2009	18:15	23.88	324	4.02
8/11/2009	18:30	23.91	324	4.11
8/11/2009	18:45	23.91	325	4.15
8/11/2009	19:00	23.88	324	3.88
8/11/2009	19:15	23.89	324	3.77
8/11/2009	19:30	23.87	325	3.67
8/11/2009	19:45	23.85	325	3.71
8/11/2009	20:00	23.88	325	3.82
8/11/2009	20:15	23.84	325	3.54
8/11/2009	20:30	23.82	325	3.62
8/11/2009	20:45	23.85	325	3.65
8/11/2009	21:00	23.85	325	3.59
8/11/2009	21:15	23.81	325	3.21
8/11/2009	21:30	23.81	325	3.20

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/11/2009	21:45	23.79	325	3.23
8/11/2009	22:00	23.75	326	3.17
8/11/2009	22:15	23.75	326	3.00
8/11/2009	22:30	23.73	326	3.00
8/11/2009	22:45	23.73	326	3.15
8/11/2009	23:00	23.75	326	3.07
8/11/2009	23:15	23.72	326	2.94
8/11/2009	23:30	23.72	327	3.03
8/11/2009	23:45	23.70	327	2.90
8/12/2009	0:00	23.73	326	3.04
8/12/2009	0:15	23.66	327	2.93
8/12/2009	0:30	23.54	327	2.97
8/12/2009	0:45	23.45	327	3.39
8/12/2009	1:00	23.32	326	3.56
8/12/2009	1:15	23.23	327	3.77
8/12/2009	1:30	23.09	326	3.75
8/12/2009	1:45	23.01	327	3.93
8/12/2009	2:00	22.89	327	3.89
8/12/2009	2:15	22.79	326	3.95
8/12/2009	2:30	22.69	326	3.91
8/12/2009	2:45	22.59	326	3.89
8/12/2009	3:00	22.51	326	3.90
8/12/2009	3:15	22.39	326	3.86
8/12/2009	3:30	22.29	326	3.84
8/12/2009	3:45	22.20	326	3.83
8/12/2009	4:00	22.10	326	3.79
8/12/2009	4:15	22.02	326	3.80
8/12/2009	4:30	21.92	326	3.82
8/12/2009	4:45	21.86	326	3.78
8/12/2009	5:00	21.79	326	3.74

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/12/2009	5:15	21.68	326	3.74
8/12/2009	5:30	21.64	327	3.66
8/12/2009	5:45	21.52	327	3.67
8/12/2009	6:00	21.47	327	3.59
8/12/2009	6:15	21.39	327	3.60
8/12/2009	6:30	21.31	327	3.59
8/12/2009	6:45	21.27	327	3.58
8/12/2009	7:00	21.21	327	3.57
8/12/2009	7:15	21.16	327	3.59
8/12/2009	7:30	21.14	327	3.52
8/12/2009	7:45	21.11	327	3.57
8/12/2009	8:00	21.11	327	3.59
8/12/2009	8:15	21.13	327	3.55
8/12/2009	8:30	21.14	327	3.53
8/12/2009	8:45	21.16	327	3.48
8/12/2009	9:00	21.18	327	3.47
8/12/2009	9:15	21.19	327	3.40
8/12/2009	9:30	21.20	327	3.36
8/12/2009	9:45	21.22	327	3.34
8/12/2009	10:00	21.25	328	3.34
8/12/2009	10:15	21.27	328	3.30
8/12/2009	10:30	21.30	328	3.20
8/12/2009	10:45	21.32	328	3.23
8/12/2009	11:00	21.36	328	3.13
8/12/2009	11:15	21.40	328	3.11
8/12/2009	11:30	21.46	329	3.31
8/12/2009	11:45	21.50	329	3.23
8/12/2009	12:00	21.61	329	3.10
8/12/2009	12:15	21.75	328	3.26
8/12/2009	12:30	21.79	328	3.28

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/12/2009	12:45	21.82	329	3.23
8/12/2009	13:00	21.86	329	3.19
8/12/2009	13:15	21.89	329	3.16
8/12/2009	13:30	21.89	329	3.14
8/12/2009	13:45	21.92	329	3.05
8/12/2009	14:00	21.93	329	3.02
8/12/2009	14:15	21.98	329	3.02
8/12/2009	14:30	21.98	329	3.06
8/12/2009	14:45	21.99	329	3.02
8/12/2009	15:00	22.03	329	3.06
8/12/2009	15:15	22.08	329	3.06
8/12/2009	15:30	22.06	330	2.84
8/12/2009	15:45	22.05	330	2.51
8/12/2009	16:00	22.05	330	2.69
8/12/2009	16:15	22.10	330	2.79
8/12/2009	16:30	22.10	330	2.73
8/12/2009	16:45	22.17	330	2.67
8/12/2009	17:00	22.11	330	2.60
8/12/2009	17:15	22.10	331	2.55
8/12/2009	17:30	22.15	331	2.52
8/12/2009	17:45	22.20	331	2.40
8/12/2009	18:00	22.20	331	2.35
8/12/2009	18:15	22.18	331	2.25
8/12/2009	18:30	22.14	331	2.20
8/12/2009	18:45	22.18	332	2.24
8/12/2009	19:00	22.22	332	2.22
8/12/2009	19:15	22.16	332	2.08
8/12/2009	19:30	22.17	332	2.01
8/12/2009	19:45	22.19	332	1.98
8/12/2009	20:00	22.19	333	1.84



Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/12/2009	20:15	22.29	332	1.98
8/12/2009	20:30	22.36	332	1.96
8/12/2009	20:45	22.34	333	2.06
8/12/2009	21:00	22.34	333	1.97
8/12/2009	21:15	22.35	333	2.01
8/12/2009	21:30	22.33	333	1.92
8/12/2009	21:45	22.34	333	1.90
8/12/2009	22:00	22.36	333	1.93
8/12/2009	22:15	22.38	333	1.92
8/12/2009	22:30	22.32	333	1.83
8/12/2009	22:45	22.44	333	1.90
8/12/2009	23:00	22.43	333	1.93
8/12/2009	23:15	22.39	333	1.76
8/12/2009	23:30	22.39	334	1.76
8/12/2009	23:45	22.44	333	1.80
8/13/2009	0:00	22.48	333	1.76
8/13/2009	0:15	22.43	334	1.73
8/13/2009	0:30	22.44	334	1.70
8/13/2009	0:45	22.46	334	1.63
8/13/2009	1:00	22.43	334	1.63
8/13/2009	1:15	22.51	333	1.75
8/13/2009	1:30	22.49	337	1.90
8/13/2009	1:45	22.52	336	1.72
8/13/2009	2:00	22.54	336	1.75
8/13/2009	2:15	22.47	336	1.81
8/13/2009	2:30	22.57	336	1.68
8/13/2009	2:45	22.64	335	1.79
8/13/2009	3:00	22.66	334	1.82
8/13/2009	3:15	22.57	335	1.84
8/13/2009	3:30	22.62	310	1.81

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/13/2009	3:45	22.60	321	1.87
8/13/2009	4:00	22.57	333	1.91
8/13/2009	4:15	22.54	326	2.10
8/13/2009	4:30	22.51	336	1.96
8/13/2009	4:45	22.52	335	1.90
8/13/2009	5:00	22.52	336	1.97
8/13/2009	5:15	22.48	328	2.15
8/13/2009	5:30	22.51	334	2.03
8/13/2009	5:45	22.43	334	2.19
8/13/2009	6:00	22.36	335	2.51
8/13/2009	6:15	22.32	335	2.67
8/13/2009	6:30	22.27	329	2.73
8/13/2009	6:45	22.22	333	2.80
8/13/2009	7:00	22.16	334	2.70
8/13/2009	7:15	22.11	333	2.58
8/13/2009	7:30	22.07	334	2.85
8/13/2009	7:45	22.03	332	2.97
8/13/2009	8:00	22.00	331	3.09
8/13/2009	8:15	21.94	331	3.22
8/13/2009	8:30	21.93	331	3.25
8/13/2009	8:45	21.92	332	3.25
8/13/2009	9:00	21.90	332	3.37
8/13/2009	9:15	21.90	332	3.50
8/13/2009	9:30	21.93	334	3.60
8/13/2009	9:45	21.98	332	3.61
8/13/2009	10:00	22.01	332	3.57
8/13/2009	10:15	22.04	332	3.74
8/13/2009	10:30	22.06	333	3.91
8/13/2009	10:45	22.13	332	3.81
8/13/2009	11:00	22.10	333	3.86

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/13/2009	11:15	22.09	333	3.64
8/13/2009	11:30	22.12	334	3.52
8/13/2009	11:45	22.12	335	3.52
8/13/2009	12:00	22.13	335	3.41
8/13/2009	12:15	22.15	335	3.40
8/13/2009	12:30	22.20	335	3.42
8/13/2009	12:45	22.24	334	3.47
8/13/2009	13:00	22.26	334	3.53
8/13/2009	13:15	22.27	335	3.54
8/13/2009	13:30	22.26	335	3.40
8/13/2009	13:45	22.31	335	3.50
8/13/2009	14:00	22.41	334	3.53
8/13/2009	14:15	22.38	335	3.48
8/13/2009	14:30	22.33	335	3.43
8/13/2009	14:45	22.53	334	3.29
8/13/2009	15:00	22.48	335	3.27
8/13/2009	15:15	22.46	335	3.26
8/13/2009	15:30	22.47	335	3.29
8/13/2009	15:45	22.56	335	3.21
8/13/2009	16:00	22.58	336	3.16
8/13/2009	16:15	22.52	336	3.05
8/13/2009	16:30	22.59	336	3.09
8/13/2009	16:45	22.61	336	3.11
8/13/2009	17:00	22.62	336	3.07
8/13/2009	17:15	22.59	336	3.03
8/13/2009	17:30	22.61	336	3.00
8/13/2009	17:45	22.62	334	3.04
8/13/2009	18:00	22.61	332	2.73
8/13/2009	18:15	22.63	335	2.82
8/13/2009	18:30	22.72	334	2.86

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/13/2009	18:45	22.66	337	2.89
8/13/2009	19:00	22.65	334	2.79
8/13/2009	19:15	22.75	336	2.76
8/13/2009	19:30	22.71	337	2.76
8/13/2009	19:45	22.56	338	2.60
8/13/2009	20:00	22.67	336	2.51
8/13/2009	20:15	22.72	336	2.65
8/13/2009	20:30	22.74	327	2.52
8/13/2009	20:45	22.83	334	2.50
8/13/2009	21:00	22.85	337	2.64
8/13/2009	21:15	22.75	337	2.46
8/13/2009	21:30	22.77	338	2.40
8/13/2009	21:45	22.89	337	2.62
8/13/2009	22:00	22.85	337	2.52
8/13/2009	22:15	22.93	335	2.48
8/13/2009	22:30	22.79	337	2.34
8/13/2009	22:45	23.00	337	2.59
8/13/2009	23:00	23.11	334	2.82
8/13/2009	23:15	22.98	336	2.68
8/13/2009	23:30	23.04	335	2.79
8/13/2009	23:45	22.99	338	2.63
8/14/2009	0:00	23.01	338	2.88
8/14/2009	0:15	23.01	338	2.57
8/14/2009	0:30	23.06	338	2.52
8/14/2009	0:45	23.03	338	2.60
8/14/2009	1:00	23.16	337	2.59
8/14/2009	1:15	23.03	338	2.65
8/14/2009	1:30	22.99	338	2.98
8/14/2009	1:45	22.97	338	2.74
8/14/2009	2:00	23.03	338	2.68

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/14/2009	2:15	22.94	339	2.50
8/14/2009	2:30	22.98	338	2.58
8/14/2009	2:45	22.92	338	2.49
8/14/2009	3:00	22.95	338	2.43
8/14/2009	3:15	22.92	337	2.56
8/14/2009	3:30	22.88	336	2.80
8/14/2009	3:45	22.78	335	3.02
8/14/2009	4:00	22.74	336	3.27
8/14/2009	4:15	22.69	337	2.95
8/14/2009	4:30	22.61	336	2.93
8/14/2009	4:45	22.53	335	3.35
8/14/2009	5:00	22.47	335	3.45
8/14/2009	5:15	22.41	335	3.41
8/14/2009	5:30	22.33	335	3.48
8/14/2009	5:45	22.25	334	3.48
8/14/2009	6:00	22.17	335	3.47
8/14/2009	6:15	22.10	335	3.41
8/14/2009	6:30	22.02	334	3.37
8/14/2009	6:45	21.95	335	3.41
8/14/2009	7:00	21.87	335	3.41
8/14/2009	7:15	21.82	335	3.39
8/14/2009	7:30	21.80	336	3.38
8/14/2009	7:45	21.78	335	3.37
8/14/2009	8:00	21.74	336	3.36
8/14/2009	8:15	21.73	335	3.39
8/14/2009	8:30	21.73	336	3.40
8/14/2009	8:45	21.73	336	3.47
8/14/2009	9:00	21.75	337	3.54
8/14/2009	9:15	21.76	337	3.60
8/14/2009	9:30	21.81	336	3.61

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/14/2009	9:45	21.83	337	3.73
8/14/2009	10:00	21.84	337	3.50
8/14/2009	10:15	21.83	337	3.41
8/14/2009	10:30	21.84	337	3.37
8/14/2009	10:45	21.83	338	3.33
8/14/2009	11:00	21.87	338	3.29
8/14/2009	11:15	21.92	337	3.22
8/14/2009	11:30	21.99	338	3.34
8/14/2009	11:45	21.98	338	3.28
8/14/2009	12:00	21.99	339	3.18
8/14/2009	12:15	22.00	338	3.16
8/14/2009	12:30	22.02	339	3.18
8/14/2009	12:45	22.07	339	3.16
8/14/2009	13:00	22.10	338	3.11
8/14/2009	13:15	22.09	339	3.10
8/14/2009	13:30	22.17	339	3.07
8/14/2009	13:45	22.17	338	3.02
8/14/2009	14:00	22.14	339	2.99
8/14/2009	14:15	22.21	338	2.98
8/14/2009	14:30	22.22	338	3.00
8/14/2009	14:45	22.21	340	2.96
8/14/2009	15:00	22.30	339	2.85
8/14/2009	15:15	22.35	338	3.05
8/14/2009	15:30	22.30	340	2.85
8/14/2009	15:45	22.37	339	2.66
8/14/2009	16:00	22.39	340	2.78
8/14/2009	16:15	22.38	340	2.68
8/14/2009	16:30	22.38	340	2.64
8/14/2009	16:45	22.46	340	2.64
8/14/2009	17:00	22.38	341	2.54

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/14/2009	17:15	22.48	342	2.58
8/14/2009	17:30	22.49	340	2.67
8/14/2009	17:45	22.46	341	2.58
8/14/2009	18:00	22.53	341	2.57
8/14/2009	18:15	22.48	341	2.41
8/14/2009	18:30	22.54	341	2.38
8/14/2009	18:45	22.52	341	2.43
8/14/2009	19:00	22.49	342	2.35
8/14/2009	19:15	22.47	342	2.21
8/14/2009	19:30	22.45	342	2.08
8/14/2009	19:45	22.48	342	1.97
8/14/2009	20:00	22.51	342	1.93
8/14/2009	20:15	22.51	342	2.00
8/14/2009	20:30	22.58	342	2.05
8/14/2009	20:45	22.56	342	2.08
8/14/2009	21:00	22.64	342	2.04
8/14/2009	21:15	22.57	343	1.95
8/14/2009	21:30	22.61	343	1.85
8/14/2009	21:45	22.69	342	2.06
8/14/2009	22:00	22.67	342	2.12
8/14/2009	22:15	22.62	343	2.34
8/14/2009	22:30	22.64	343	2.22
8/14/2009	22:45	22.66	343	2.09
8/14/2009	23:00	22.74	343	2.01
8/14/2009	23:15	22.69	343	2.05
8/14/2009	23:30	22.69	343	1.98
8/14/2009	23:45	22.72	342	2.01
8/15/2009	0:00	22.70	343	1.94
8/15/2009	0:15	22.74	342	1.95
8/15/2009	0:30	22.67	343	2.01

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/15/2009	0:45	22.68	343	2.04
8/15/2009	1:00	22.65	342	2.28
8/15/2009	1:15	22.63	342	2.03
8/15/2009	1:30	22.61	342	2.19
8/15/2009	1:45	22.57	339	2.10
8/15/2009	2:00	22.42	338	2.78
8/15/2009	2:15	22.36	339	3.39
8/15/2009	2:30	22.30	339	3.55
8/15/2009	2:45	22.22	339	3.63
8/15/2009	3:00	22.17	340	3.53
8/15/2009	3:15	22.09	340	3.38
8/15/2009	3:30	22.01	340	3.49
8/15/2009	3:45	21.92	340	3.57
8/15/2009	4:00	21.84	340	3.61
8/15/2009	4:15	21.75	340	3.66
8/15/2009	4:30	21.67	340	3.73
8/15/2009	4:45	21.59	341	3.70
8/15/2009	5:00	21.50	341	3.54
8/15/2009	5:15	21.43	341	3.67
8/15/2009	5:30	21.33	341	3.74
8/15/2009	5:45	21.15	341	3.80
8/15/2009	6:00	21.12	341	3.74
8/15/2009	6:15	21.03	341	3.71
8/15/2009	6:30	20.98	342	3.60
8/15/2009	6:45	20.96	341	3.55
8/15/2009	7:00	20.85	342	3.64
8/15/2009	7:15	20.84	341	3.71
8/15/2009	7:30	20.69	341	3.65
8/15/2009	7:45	20.72	341	3.59
8/15/2009	8:00	20.68	341	3.62

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/15/2009	8:15	20.68	342	3.57
8/15/2009	8:30	20.76	342	3.62
8/15/2009	8:45	20.78	342	3.66
8/15/2009	9:00	20.80	342	3.69
8/15/2009	9:15	20.86	342	3.69
8/15/2009	9:30	20.95	342	3.87
8/15/2009	9:45	20.96	342	3.78
8/15/2009	10:00	20.89	343	3.58
8/15/2009	10:15	20.95	343	3.90
8/15/2009	10:30	21.18	342	3.89
8/15/2009	10:45	21.23	343	4.14
8/15/2009	11:00	21.23	343	3.85
8/15/2009	11:15	21.52	343	4.50
8/15/2009	11:30	21.15	344	4.07
8/15/2009	11:45	21.27	344	3.64
8/15/2009	12:00	21.25	344	3.79
8/15/2009	12:15	21.25	345	3.85
8/15/2009	12:30	21.41	345	3.56
8/15/2009	12:45	21.35	345	3.64
8/15/2009	13:00	21.34	345	3.61
8/15/2009	13:15	21.44	345	3.66
8/15/2009	13:30	21.50	345	3.63
8/15/2009	13:45	21.51	345	3.51
8/15/2009	14:00	21.54	345	3.66
8/15/2009	14:15	21.57	347	3.50
8/15/2009	14:30	21.60	346	3.62
8/15/2009	14:45	21.72	345	3.68
8/15/2009	15:00	21.82	345	4.06
8/15/2009	15:15	21.87	345	4.15
8/15/2009	15:30	21.89	345	3.92

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/15/2009	15:45	21.96	345	3.92
8/15/2009	16:00	21.91	346	3.83
8/15/2009	16:15	21.93	346	3.67
8/15/2009	16:30	21.96	346	3.82
8/15/2009	16:45	22.18	345	3.84
8/15/2009	17:00	22.12	346	3.96
8/15/2009	17:15	22.04	346	3.83
8/15/2009	17:30	22.09	347	3.76
8/15/2009	17:45	22.10	348	3.92
8/15/2009	18:00	22.20	347	3.99
8/15/2009	18:15	22.15	346	3.93
8/15/2009	18:30	22.14	347	3.84
8/15/2009	18:45	22.19	348	3.90
8/15/2009	19:00	22.27	347	3.84
8/15/2009	19:15	22.22	348	3.79
8/15/2009	19:30	22.19	348	3.51
8/15/2009	19:45	22.20	348	3.48
8/15/2009	20:00	22.18	348	3.36
8/15/2009	20:15	22.17	348	3.26
8/15/2009	20:30	22.30	347	3.44
8/15/2009	20:45	22.33	347	3.68
8/15/2009	21:00	22.36	347	3.53
8/15/2009	21:15	22.30	348	3.28
8/15/2009	21:30	22.30	348	3.37
8/15/2009	21:45	22.47	346	3.68
8/15/2009	22:00	22.34	347	3.46
8/15/2009	22:15	22.42	347	3.58
8/15/2009	22:30	22.45	346	3.61
8/15/2009	22:45	22.39	347	3.43
8/15/2009	23:00	22.47	346	3.56

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/15/2009	23:15	22.45	346	3.57
8/15/2009	23:30	22.44	347	3.39
8/15/2009	23:45	22.40	347	3.44
8/16/2009	0:00	22.44	347	3.42
8/16/2009	0:15	22.48	347	3.50
8/16/2009	0:30	22.61	346	3.92
8/16/2009	0:45	22.55	346	3.70
8/16/2009	1:00	22.49	347	3.52
8/16/2009	1:15	22.54	347	3.49
8/16/2009	1:30	22.49	347	3.50
8/16/2009	1:45	22.53	346	3.48
8/16/2009	2:00	22.50	347	3.45
8/16/2009	2:15	22.51	347	3.52
8/16/2009	2:30	22.50	347	3.56
8/16/2009	2:45	22.54	348	3.28
8/16/2009	3:00	22.41	349	3.10
8/16/2009	3:15	22.61	346	3.02
8/16/2009	3:30	22.83	336	3.66
8/16/2009	3:45	22.74	334	4.94
8/16/2009	4:00	22.63	334	5.15
8/16/2009	4:15	22.61	333	5.01
8/16/2009	4:30	22.66	332	4.89
8/16/2009	4:45	22.64	331	5.17
8/16/2009	5:00	22.53	331	5.09
8/16/2009	5:15	22.50	328	5.30
8/16/2009	5:30	22.50	326	5.15
8/16/2009	5:45	22.46	328	5.35
8/16/2009	6:00	22.45	325	5.32
8/16/2009	6:15	22.46	322	5.37
8/16/2009	6:30	22.37	325	5.47

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/16/2009	6:45	22.41	324	5.30
8/16/2009	7:00	22.35	324	5.11
8/16/2009	7:15	22.35	323	5.08
8/16/2009	7:30	22.34	322	4.93
8/16/2009	7:45	22.46	315	4.88
8/16/2009	8:00	22.47	315	5.07
8/16/2009	8:15	22.36	316	4.80
8/16/2009	8:30	22.30	322	4.49
8/16/2009	8:45	22.58	300	4.79
8/16/2009	9:00	22.57	277	5.53
8/16/2009	9:15	22.56	279	5.50
8/16/2009	9:30	22.57	277	5.41
8/16/2009	9:45	22.57	274	5.49
8/16/2009	10:00	22.55	275	5.33
8/16/2009	10:15	22.51	273	5.38
8/16/2009	10:30	22.53	274	5.17
8/16/2009	10:45	22.55	274	5.08
8/16/2009	11:00	22.56	272	5.05
8/16/2009	11:15	22.56	274	5.22
8/16/2009	11:30	22.62	271	5.19
8/16/2009	11:45	22.77	274	5.09
8/16/2009	12:00	22.63	273	5.15
8/16/2009	12:15	22.59	276	4.93
8/16/2009	12:30	22.66	283	4.75
8/16/2009	12:45	22.91	284	4.80
8/16/2009	13:00	22.84	286	5.03
8/16/2009	13:15	23.17	293	4.73
8/16/2009	13:30	23.50	314	4.60
8/16/2009	13:45	24.33	320	5.03
8/16/2009	14:00	24.36	321	6.24

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/16/2009	14:15	24.53	320	6.34
8/16/2009	14:30	24.75	320	6.45
8/16/2009	14:45	24.98	319	6.47
8/16/2009	15:00	25.10	319	6.35
8/16/2009	15:15	25.17	318	6.37
8/16/2009	15:30	25.23	317	6.13
8/16/2009	15:45	25.27	316	6.09
8/16/2009	16:00	25.30	315	6.02
8/16/2009	16:15	25.23	312	5.95
8/16/2009	16:30	25.18	311	5.99
8/16/2009	16:45	25.15	310	6.07
8/16/2009	17:00	25.18	309	6.13
8/16/2009	17:15	25.16	309	6.14
8/16/2009	17:30	25.11	308	6.11
8/16/2009	17:45	25.10	308	6.09
8/16/2009	18:00	25.08	308	6.08
8/16/2009	18:15	25.00	307	6.07
8/16/2009	18:30	24.97	307	6.10
8/16/2009	18:45	24.93	307	6.08
8/16/2009	19:00	24.85	306	6.06
8/16/2009	19:15	24.81	306	6.03
8/16/2009	19:30	24.75	306	6.02
8/16/2009	19:45	24.69	306	5.95
8/16/2009	20:00	24.64	305	5.90
8/16/2009	20:15	24.59	305	5.87
8/16/2009	20:30	24.54	305	5.79
8/16/2009	20:45	24.48	304	5.71
8/16/2009	21:00	24.43	304	5.71
8/16/2009	21:15	24.36	304	5.69
8/16/2009	21:30	24.31	304	5.56

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/16/2009	21:45	24.28	304	5.50
8/16/2009	22:00	24.19	301	5.69
8/16/2009	22:15	24.15	301	5.64
8/16/2009	22:30	24.11	301	5.58
8/16/2009	22:45	24.06	301	5.49
8/16/2009	23:00	24.01	301	5.46
8/16/2009	23:15	24.00	301	5.41
8/16/2009	23:30	23.52	249	6.85
8/16/2009	23:45	23.13	203	7.11
8/17/2009	0:00	22.89	167	7.37
8/17/2009	0:15	22.77	170	7.17
8/17/2009	0:30	22.84	222	6.94
8/17/2009	0:45	22.84	237	6.61
8/17/2009	1:00	22.91	242	6.63
8/17/2009	1:15	22.79	240	6.55
8/17/2009	1:30	22.71	246	6.60
8/17/2009	1:45	22.69	241	6.47
8/17/2009	2:00	22.79	250	6.27
8/17/2009	2:15	22.86	248	6.20
8/17/2009	2:30	22.74	239	6.28
8/17/2009	2:45	22.37	219	6.79
8/17/2009	3:00	22.31	230	6.68
8/17/2009	3:15	22.25	223	6.70
8/17/2009	3:30	22.12	204	6.90
8/17/2009	3:45	22.03	195	6.91
8/17/2009	4:00	21.96	185	6.90
8/17/2009	4:15	21.91	175	6.94
8/17/2009	4:30	21.88	166	7.03
8/17/2009	4:45	21.86	157	7.12
8/17/2009	5:00	21.84	148	7.18

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/17/2009	5:15	21.83	143	7.22
8/17/2009	5:30	21.80	140	7.24
8/17/2009	5:45	21.78	136	7.25
8/17/2009	6:00	21.73	128	7.22
8/17/2009	6:15	21.66	125	7.22
8/17/2009	6:30	21.61	140	7.19
8/17/2009	6:45	21.61	165	7.03
8/17/2009	7:00	21.57	150	6.83
8/17/2009	7:15	21.78	188	6.48
8/17/2009	7:30	21.82	208	6.19
8/17/2009	7:45	21.66	184	6.15
8/17/2009	8:00	21.72	191	6.08
8/17/2009	8:15	21.75	178	6.02
8/17/2009	8:30	21.64	134	6.18
8/17/2009	8:45	21.51	106	6.39
8/17/2009	9:00	21.45	96	6.56
8/17/2009	9:15	21.41	90	6.66
8/17/2009	9:30	21.40	86	6.68
8/17/2009	9:45	21.39	85	6.67
8/17/2009	10:00	21.39	87	6.64
8/17/2009	10:15	21.41	92	6.63
8/17/2009	10:30	21.45	102	6.63
8/17/2009	10:45	21.51	111	6.58
8/17/2009	11:00	21.55	121	6.52
8/17/2009	11:15	21.58	128	6.44
8/17/2009	11:30	21.59	128	6.40
8/17/2009	11:45	21.57	123	6.45
8/17/2009	12:00	21.55	117	6.54
8/17/2009	12:15	21.52	112	6.65
8/17/2009	12:30	21.50	110	6.75

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/17/2009	12:45	21.49	110	6.83
8/17/2009	13:00	21.49	113	6.87
8/17/2009	13:15	21.50	114	6.92
8/17/2009	13:30	21.51	115	6.97
8/17/2009	13:45	21.51	116	7.00
8/17/2009	14:00	21.52	116	7.02
8/17/2009	14:15	21.52	116	7.06
8/17/2009	14:30	21.53	116	7.07
8/17/2009	14:45	21.54	117	7.08
8/17/2009	15:00	21.57	118	7.06
8/17/2009	15:15	21.64	120	7.06
8/17/2009	15:30	21.70	121	7.05
8/17/2009	15:45	21.75	121	7.06
8/17/2009	16:00	21.78	121	7.07
8/17/2009	16:15	21.80	120	7.07
8/17/2009	16:30	21.82	121	7.07
8/17/2009	16:45	21.83	122	7.08
8/17/2009	17:00	21.85	122	7.07
8/17/2009	17:15	21.90	123	7.05
8/17/2009	17:30	21.92	123	7.06
8/17/2009	17:45	21.93	125	7.04
8/17/2009	18:00	21.93	128	7.03
8/17/2009	18:15	21.93	131	6.99
8/17/2009	18:30	21.93	134	7.00
8/17/2009	18:45	21.95	136	6.98
8/17/2009	19:00	21.96	138	6.98
8/17/2009	19:15	21.97	138	6.96
8/17/2009	19:30	21.97	140	6.97
8/17/2009	19:45	21.98	140	6.98
8/17/2009	20:00	21.98	140	6.99



Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/17/2009	20:15	21.97	138	7.00
8/17/2009	20:30	21.95	137	7.00
8/17/2009	20:45	21.94	136	7.01
8/17/2009	21:00	21.95	136	7.00
8/17/2009	21:15	21.96	136	7.00
8/17/2009	21:30	21.95	137	6.99
8/17/2009	21:45	21.93	137	7.01
8/17/2009	22:00	21.91	137	7.00
8/17/2009	22:15	21.90	137	6.98
8/17/2009	22:30	21.89	138	6.97
8/17/2009	22:45	21.89	140	6.95
8/17/2009	23:00	21.89	140	6.93
8/17/2009	23:15	21.88	140	6.95
8/17/2009	23:30	21.88	139	6.97
8/17/2009	23:45	21.88	136	6.99
8/18/2009	0:00	21.86	135	7.00
8/18/2009	0:15	21.85	134	7.02
8/18/2009	0:30	21.84	133	7.02
8/18/2009	0:45	21.84	134	7.00
8/18/2009	1:00	21.83	134	7.02
8/18/2009	1:15	21.82	134	7.03
8/18/2009	1:30	21.82	134	7.05
8/18/2009	1:45	21.82	134	7.05
8/18/2009	2:00	21.81	133	7.07
8/18/2009	2:15	21.81	134	7.08
8/18/2009	2:30	21.80	134	7.10
8/18/2009	2:45	21.79	134	7.11
8/18/2009	3:00	21.79	135	7.12
8/18/2009	3:15	21.79	99	7.11
8/18/2009	3:30	21.78	136	7.13

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/18/2009	3:45	21.78	137	7.13
8/18/2009	4:00	21.79	138	7.12
8/18/2009	4:15	21.79	139	7.13
8/18/2009	4:30	21.79	140	7.13
8/18/2009	4:45	21.79	140	7.13
8/18/2009	5:00	21.80	141	7.14
8/18/2009	5:15	21.80	141	7.15
8/18/2009	5:30	21.81	141	7.16
8/18/2009	5:45	21.81	142	7.16
8/18/2009	6:00	21.81	143	7.15
8/18/2009	6:15	21.81	120	7.17
8/18/2009	6:30	21.81	145	7.17
8/18/2009	6:45	21.80	145	7.18
8/18/2009	7:00	21.81	146	7.19
8/18/2009	7:15	21.81	147	7.20
8/18/2009	7:30	21.81	147	7.20
8/18/2009	7:45	21.82	109	7.22
8/18/2009	8:00	21.84	149	7.23
8/18/2009	8:15	21.84	149	7.23
8/18/2009	8:30	21.86	150	7.23
8/18/2009	8:45	21.87	150	7.23
8/18/2009	9:00	21.89	151	7.25
8/18/2009	9:15	21.91	151	7.23
8/18/2009	9:30	21.93	152	7.25
8/18/2009	9:45	21.96	152	7.25
8/18/2009	10:00	22.00	152	7.26
8/18/2009	10:15	22.02	152	7.29
8/18/2009	10:30	22.03	153	7.29
8/18/2009	10:45	22.04	153	7.30
8/18/2009	11:00	22.04	153	7.32

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/18/2009	11:15	22.07	153	7.32
8/18/2009	11:30	22.11	154	7.33
8/18/2009	11:45	22.16	154	7.35
8/18/2009	12:00	22.20	154	7.36
8/18/2009	12:15	22.23	154	7.37
8/18/2009	12:30	22.27	152	7.38
8/18/2009	12:45	22.31	139	7.41
8/18/2009	13:00	22.36	155	7.42
8/18/2009	13:15	22.38	129	7.42
8/18/2009	13:30	22.41	158	7.44
8/18/2009	13:45	22.42	158	7.45
8/18/2009	14:00	22.45	158	7.46
8/18/2009	14:15	22.45	158	7.49
8/18/2009	14:30	22.47	158	7.49
8/18/2009	14:45	22.48	159	7.49
8/18/2009	15:00	22.50	159	7.50
8/18/2009	15:15	22.56	160	7.51
8/18/2009	15:30	22.63	160	7.53
8/18/2009	15:45	22.61	160	7.53
8/18/2009	16:00	22.62	161	7.53
8/18/2009	16:15	22.64	161	7.54
8/18/2009	16:30	22.62	161	7.53
8/18/2009	16:45	22.61	162	7.53
8/18/2009	17:00	22.59	162	7.51
8/18/2009	17:15	22.58	162	7.50
8/18/2009	17:30	22.59	162	7.49
8/18/2009	17:45	22.59	162	7.51
8/18/2009	18:00	22.61	162	7.50
8/18/2009	18:15	22.60	162	7.49
8/18/2009	18:30	22.60	162	7.48

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/18/2009	18:45	22.58	162	7.46
8/18/2009	19:00	22.56	163	7.45
8/18/2009	19:15	22.54	163	7.42
8/18/2009	19:30	22.52	163	7.42
8/18/2009	19:45	22.49	163	7.41
8/18/2009	20:00	22.47	163	7.40
8/18/2009	20:15	22.45	163	7.40
8/18/2009	20:30	22.42	164	7.39
8/18/2009	20:45	22.40	164	7.39
8/18/2009	21:00	22.39	164	7.39
8/18/2009	21:15	22.37	164	7.38
8/18/2009	21:30	22.36	165	7.37
8/18/2009	21:45	22.34	165	7.37
8/18/2009	22:00	22.32	165	7.37
8/18/2009	22:15	22.29	166	7.36
8/18/2009	22:30	22.27	166	7.37
8/18/2009	22:45	22.24	166	7.38
8/18/2009	23:00	22.22	166	7.37
8/18/2009	23:15	22.20	167	7.37
8/18/2009	23:30	22.17	167	7.37
8/18/2009	23:45	22.15	167	7.37
8/19/2009	0:00	22.13	167	7.37
8/19/2009	0:15	22.11	167	7.37
8/19/2009	0:30	22.09	167	7.36
8/19/2009	0:45	22.07	167	7.36
8/19/2009	1:00	22.05	168	7.36
8/19/2009	1:15	22.03	168	7.35
8/19/2009	1:30	22.01	168	7.35
8/19/2009	1:45	21.99	168	7.35
8/19/2009	2:00	21.96	168	7.35

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/19/2009	2:15	21.94	168	7.35
8/19/2009	2:30	21.92	168	7.36
8/19/2009	2:45	21.90	168	7.35
8/19/2009	3:00	21.88	168	7.35
8/19/2009	3:15	21.86	168	7.34
8/19/2009	3:30	21.84	169	7.34
8/19/2009	3:45	21.83	169	7.35
8/19/2009	4:00	21.81	169	7.34
8/19/2009	4:15	21.79	169	7.34
8/19/2009	4:30	21.77	169	7.34
8/19/2009	4:45	21.74	169	7.34
8/19/2009	5:00	21.72	169	7.34
8/19/2009	5:15	21.70	169	7.34
8/19/2009	5:30	21.68	170	7.33
8/19/2009	5:45	21.66	170	7.34
8/19/2009	6:00	21.63	170	7.33
8/19/2009	6:15	21.61	170	7.34
8/19/2009	6:30	21.60	170	7.35
8/19/2009	6:45	21.58	171	7.35
8/19/2009	7:00	21.56	171	7.36
8/19/2009	7:15	21.56	171	7.38
8/19/2009	7:30	21.57	171	7.39
8/19/2009	7:45	21.58	172	7.42
8/19/2009	8:00	21.58	172	7.43
8/19/2009	8:15	21.60	172	7.45
8/19/2009	8:30	21.63	172	7.47
8/19/2009	8:45	21.65	173	7.50
8/19/2009	9:00	21.65	173	7.50
8/19/2009	9:15	21.66	173	7.50
8/19/2009	9:30	21.70	173	7.54

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/19/2009	9:45	21.74	174	7.56
8/19/2009	10:00	21.75	174	7.60
8/19/2009	10:15	21.75	174	7.60
8/19/2009	10:30	21.80	174	7.63
8/19/2009	10:45	21.86	175	7.67
8/19/2009	11:00	21.90	175	7.69
8/19/2009	11:15	21.93	175	7.70
8/19/2009	11:30	21.91	175	7.68
8/19/2009	11:45	21.89	175	7.66
8/19/2009	12:00	21.88	175	7.65
8/19/2009	12:15	21.36	138	7.96
8/19/2009	12:30	21.25	127	7.80
8/19/2009	12:45	21.31	155	7.66
8/19/2009	13:00	21.21	145	7.45
8/19/2009	13:15	21.56	141	7.44
8/19/2009	13:30	21.95	147	7.45
8/19/2009	13:45	22.24	149	7.34
8/19/2009	14:00	22.21	122	7.31
8/19/2009	14:15	22.27	126	7.45
8/19/2009	14:30	22.41	127	7.43
8/19/2009	14:45	22.38	112	7.37
8/19/2009	15:00	22.40	104	7.35
8/19/2009	15:15	22.55	116	7.35
8/19/2009	15:30	22.63	120	7.31
8/19/2009	15:45	22.59	109	7.30
8/19/2009	16:00	22.47	100	7.28
8/19/2009	16:15	22.44	102	7.23
8/19/2009	16:30	22.48	111	7.22
8/19/2009	16:45	22.52	116	7.13
8/19/2009	17:00	22.48	112	7.10

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/19/2009	17:15	22.46	117	7.02
8/19/2009	17:30	22.41	116	6.79
8/19/2009	17:45	22.41	126	6.74
8/19/2009	18:00	22.36	125	6.74
8/19/2009	18:15	22.28	115	6.71
8/19/2009	18:30	22.21	95	6.70
8/19/2009	18:45	22.16	83	6.70
8/19/2009	19:00	22.15	82	6.71
8/19/2009	19:15	22.16	85	6.73
8/19/2009	19:30	22.17	86	6.72
8/19/2009	19:45	22.17	86	6.72
8/19/2009	20:00	22.18	86	6.71
8/19/2009	20:15	22.18	88	6.67
8/19/2009	20:30	22.18	91	6.67
8/19/2009	20:45	22.20	95	6.58
8/19/2009	21:00	22.21	96	6.49
8/19/2009	21:15	22.23	94	6.44
8/19/2009	21:30	22.25	92	6.45
8/19/2009	21:45	22.28	90	6.46
8/19/2009	22:00	22.32	90	6.49
8/19/2009	22:15	22.37	91	6.50
8/19/2009	22:30	22.42	92	6.52
8/19/2009	22:45	22.46	94	6.51
8/19/2009	23:00	22.49	95	6.52
8/19/2009	23:15	22.52	96	6.51
8/19/2009	23:30	22.55	97	6.53
8/19/2009	23:45	22.59	98	6.53
8/20/2009	0:00	22.62	99	6.52
8/20/2009	0:15	22.67	100	6.50
8/20/2009	0:30	22.71	100	6.47

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/20/2009	0:45	22.75	100	6.46
8/20/2009	1:00	22.78	101	6.45
8/20/2009	1:15	22.82	101	6.42
8/20/2009	1:30	22.85	102	6.39
8/20/2009	1:45	22.88	103	6.38
8/20/2009	2:00	22.91	103	6.35
8/20/2009	2:15	22.94	104	6.33
8/20/2009	2:30	22.96	105	6.31
8/20/2009	2:45	22.96	106	6.31
8/20/2009	3:00	22.96	107	6.29
8/20/2009	3:15	22.95	108	6.29
8/20/2009	3:30	22.94	109	6.26
8/20/2009	3:45	22.93	110	6.29
8/20/2009	4:00	22.92	110	6.27
8/20/2009	4:15	22.90	111	6.26
8/20/2009	4:30	22.89	111	6.26
8/20/2009	4:45	22.87	112	6.27
8/20/2009	5:00	22.85	113	6.28
8/20/2009	5:15	22.83	113	6.19
8/20/2009	5:30	22.81	114	6.01
8/20/2009	5:45	22.78	114	6.28
8/20/2009	6:00	22.75	113	6.05
8/20/2009	6:15	22.72	113	6.24
8/20/2009	6:30	22.69	113	6.28
8/20/2009	6:45	22.66	114	6.17
8/21/2009	17:15	21.57	160	7.50
8/21/2009	17:30	21.56	160	7.57
8/21/2009	17:45	21.54	160	7.62
8/21/2009	18:00	21.53	160	7.62
8/21/2009	18:15	21.51	160	7.61

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/21/2009	18:30	21.50	160	7.59
8/21/2009	18:45	21.49	160	7.63
8/21/2009	19:00	21.47	160	7.52
8/21/2009	19:15	21.45	161	7.45
8/21/2009	19:30	21.43	161	7.44
8/21/2009	19:45	21.41	160	7.46
8/21/2009	20:00	21.38	160	7.25
8/21/2009	20:15	21.36	161	7.17
8/21/2009	20:30	21.32	161	7.50
8/21/2009	20:45	21.29	161	7.51
8/21/2009	21:00	21.26	161	7.50
8/21/2009	21:15	21.23	161	7.47
8/21/2009	21:30	21.21	161	7.50
8/21/2009	21:45	21.18	161	7.50
8/21/2009	22:00	21.15	161	7.50
8/21/2009	22:15	21.13	161	7.48
8/21/2009	22:30	21.10	162	7.46
8/21/2009	22:45	21.08	162	7.49
8/21/2009	23:00	21.05	162	7.47
8/21/2009	23:15	21.02	162	7.53
8/21/2009	23:30	21.00	162	7.53
8/21/2009	23:45	20.97	162	7.52
8/22/2009	0:00	20.95	162	7.55
8/22/2009	0:15	20.93	162	7.50
8/22/2009	0:30	20.90	162	7.53
8/22/2009	0:45	20.88	162	7.54
8/22/2009	1:00	20.85	162	7.54
8/22/2009	1:15	20.82	162	7.54
8/22/2009	1:30	20.79	162	7.53
8/22/2009	1:45	20.76	162	7.54

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/22/2009	2:00	20.73	162	7.43
8/22/2009	2:15	20.69	162	7.49
8/22/2009	2:30	20.66	162	7.53
8/22/2009	2:45	20.62	162	7.47
8/22/2009	3:00	20.59	163	7.45
8/22/2009	3:15	20.55	163	7.57
8/22/2009	3:30	20.51	161	7.59
8/22/2009	3:45	20.48	162	7.57
8/22/2009	4:00	20.44	163	7.57
8/22/2009	4:15	20.40	163	7.56
8/22/2009	4:30	20.37	163	7.58
8/22/2009	4:45	20.33	163	7.53
8/22/2009	5:00	20.29	163	7.57
8/22/2009	5:15	20.25	163	7.56
8/22/2009	5:30	20.22	163	7.54
8/22/2009	5:45	20.18	163	7.61
8/22/2009	6:00	20.15	163	7.61
8/22/2009	6:15	20.12	163	7.45
8/22/2009	6:30	20.08	163	7.48
8/22/2009	6:45	20.04	163	7.55
8/22/2009	7:00	20.01	163	7.56
8/22/2009	7:15	19.98	163	7.55
8/22/2009	7:30	19.95	163	7.65
8/22/2009	7:45	19.92	164	7.45
8/22/2009	8:00	19.90	164	7.68
8/22/2009	8:15	19.88	164	7.51
8/22/2009	8:30	19.87	164	7.62
8/22/2009	8:45	19.87	164	7.74
8/22/2009	9:00	19.87	164	7.63
8/22/2009	9:15	19.88	164	7.71

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/22/2009	9:30	19.89	165	7.78
8/22/2009	9:45	19.91	165	7.77
8/22/2009	10:00	19.94	165	7.84
8/22/2009	10:15	19.97	165	7.81
8/22/2009	10:30	20.00	165	7.88
8/22/2009	10:45	20.04	165	7.90
8/22/2009	11:00	20.08	165	7.98
8/22/2009	11:15	20.14	165	8.04
8/22/2009	11:30	20.21	166	8.12
8/22/2009	11:45	20.27	166	8.11
8/22/2009	12:00	20.31	166	8.15
8/22/2009	12:15	20.34	166	8.17
8/22/2009	12:30	20.40	166	8.21
8/22/2009	12:45	20.45	166	8.22
8/22/2009	13:00	20.49	166	8.27
8/22/2009	13:15	20.56	166	8.24
8/22/2009	13:30	20.64	166	8.31
8/22/2009	13:45	20.74	166	8.37
8/22/2009	14:00	20.79	166	8.34
8/22/2009	14:15	20.83	166	8.39
8/22/2009	14:30	20.87	166	8.40
8/22/2009	14:45	20.91	166	8.40
8/22/2009	15:00	20.97	166	8.43
8/22/2009	15:15	21.00	166	8.45
8/22/2009	15:30	21.04	166	8.39
8/22/2009	15:45	21.05	167	8.42
8/22/2009	16:00	21.09	167	8.42
8/22/2009	16:15	21.11	166	8.45
8/22/2009	16:30	21.11	167	8.44
8/22/2009	16:45	21.15	167	8.39

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/22/2009	17:00	21.13	167	8.40
8/22/2009	17:15	21.12	166	8.36
8/22/2009	17:30	21.09	166	8.30
8/22/2009	17:45	21.06	166	8.27
8/22/2009	18:00	21.01	166	8.26
8/22/2009	18:15	20.98	167	8.20
8/22/2009	18:30	20.94	167	8.16
8/22/2009	18:45	20.92	167	8.11
8/22/2009	19:00	20.89	167	8.02
8/22/2009	19:15	20.87	167	8.02
8/22/2009	19:30	20.84	167	8.00
8/22/2009	19:45	20.80	167	8.00
8/22/2009	20:00	20.76	167	7.96
8/22/2009	20:15	20.72	167	7.93
8/22/2009	20:30	20.68	167	7.91
8/22/2009	20:45	20.65	167	7.90
8/22/2009	21:00	20.61	166	7.92
8/22/2009	21:15	20.56	166	7.93
8/22/2009	21:30	20.52	166	7.87
8/22/2009	21:45	20.48	166	7.86
8/22/2009	22:00	20.44	166	7.86
8/22/2009	22:15	20.40	166	7.81
8/22/2009	22:30	20.36	166	7.78
8/22/2009	22:45	20.32	166	7.83
8/22/2009	23:00	20.28	166	7.84
8/22/2009	23:15	20.25	166	7.84
8/22/2009	23:30	20.21	166	7.85
8/22/2009	23:45	20.17	166	7.84
8/23/2009	0:00	20.14	165	7.82
8/23/2009	0:15	20.11	165	7.85

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/23/2009	0:30	20.07	165	7.87
8/23/2009	0:45	20.04	165	7.86
8/23/2009	1:00	20.00	165	7.81
8/23/2009	1:15	19.97	165	7.85
8/23/2009	1:30	19.93	165	7.84
8/23/2009	1:45	19.89	165	7.82
8/23/2009	2:00	19.85	164	7.84
8/23/2009	2:15	19.81	165	7.84
8/23/2009	2:30	19.76	165	7.85
8/23/2009	2:45	19.72	165	7.85
8/23/2009	3:00	19.68	165	7.85
8/23/2009	3:15	19.63	165	7.84
8/23/2009	3:30	19.59	165	7.82
8/23/2009	3:45	19.54	165	7.86
8/23/2009	4:00	19.49	165	7.86
8/23/2009	4:15	19.45	165	7.86
8/23/2009	4:30	19.41	165	7.85
8/23/2009	4:45	19.36	165	7.87
8/23/2009	5:00	19.33	165	7.87
8/23/2009	5:15	19.29	165	7.88
8/23/2009	5:30	19.25	165	7.85
8/23/2009	5:45	19.21	165	7.85
8/23/2009	6:00	19.17	165	7.83
8/23/2009	6:15	19.13	165	7.85
8/23/2009	6:30	19.10	165	7.86
8/23/2009	6:45	19.05	165	7.87
8/23/2009	7:00	19.03	165	7.78
8/23/2009	7:15	18.99	165	7.88
8/23/2009	7:30	18.97	165	7.88
8/23/2009	7:45	18.95	165	7.92

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/23/2009	8:00	18.94	165	7.94
8/23/2009	8:15	18.95	165	7.99
8/23/2009	8:30	18.95	165	8.01
8/23/2009	8:45	18.96	165	8.07
8/23/2009	9:00	18.98	165	7.81
8/23/2009	9:15	19.00	165	8.12
8/23/2009	9:30	19.04	165	8.17
8/23/2009	9:45	19.07	165	8.21
8/23/2009	10:00	19.12	165	8.24
8/23/2009	10:15	19.16	165	8.26
8/23/2009	10:30	19.21	165	8.30
8/23/2009	10:45	19.18	165	8.29
8/23/2009	11:00	19.18	165	8.32
8/23/2009	11:15	19.29	165	8.38
8/23/2009	11:30	19.40	165	8.40
8/23/2009	11:45	19.53	165	8.47
8/23/2009	12:00	19.64	165	8.52
8/23/2009	12:15	19.75	165	8.57
8/23/2009	12:30	19.84	165	8.58
8/23/2009	12:45	19.94	165	8.63
8/23/2009	13:00	20.04	165	8.65
8/23/2009	13:15	20.09	165	8.65
8/23/2009	13:30	20.15	165	8.70
8/23/2009	13:45	20.24	165	8.72
8/23/2009	14:00	20.36	165	8.76
8/23/2009	14:15	20.47	165	8.78
8/23/2009	14:30	20.55	165	8.82
8/23/2009	14:45	20.60	165	8.81
8/23/2009	15:00	20.66	165	8.86
8/23/2009	15:15	20.74	165	8.86

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/23/2009	15:30	20.79	165	8.87
8/23/2009	15:45	20.82	165	8.87
8/23/2009	16:00	20.86	165	8.86
8/23/2009	16:15	20.90	165	8.86
8/23/2009	16:30	20.93	165	8.84
8/23/2009	16:45	20.92	165	8.78
8/23/2009	17:00	20.94	165	8.78
8/23/2009	17:15	20.96	165	8.78
8/23/2009	17:30	20.95	165	8.72
8/23/2009	17:45	20.92	165	8.66
8/23/2009	18:00	20.88	165	8.60
8/23/2009	18:15	20.82	164	8.54
8/23/2009	18:30	20.76	165	8.42
8/23/2009	18:45	20.72	164	8.35
8/23/2009	19:00	20.69	164	8.34
8/23/2009	19:15	20.67	164	8.28
8/23/2009	19:30	20.64	164	8.19
8/23/2009	19:45	20.61	164	7.91
8/23/2009	20:00	20.59	164	8.08
8/23/2009	20:15	20.56	165	7.92
8/23/2009	20:30	20.53	164	7.89
8/23/2009	20:45	20.50	164	7.95
8/23/2009	21:00	20.47	165	8.00
8/23/2009	21:15	20.43	165	8.00
8/23/2009	21:30	20.40	164	7.98
8/23/2009	21:45	20.36	164	7.97
8/23/2009	22:00	20.32	164	7.90
8/23/2009	22:15	20.28	164	7.93
8/23/2009	22:30	20.24	165	7.92
8/23/2009	22:45	20.20	165	7.92

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/23/2009	23:00	20.16	165	7.89
8/23/2009	23:15	20.11	165	7.90
8/23/2009	23:30	20.07	165	7.89
8/23/2009	23:45	20.03	165	7.87
8/24/2009	0:00	19.98	165	7.85
8/24/2009	0:15	19.94	165	7.85
8/24/2009	0:30	19.89	165	7.85
8/24/2009	0:45	19.84	165	7.84
8/24/2009	1:00	19.80	165	7.81
8/24/2009	1:15	19.75	165	7.83
8/24/2009	1:30	19.70	165	7.82
8/24/2009	1:45	19.66	165	7.79
8/24/2009	2:00	19.60	165	7.80
8/24/2009	2:15	19.56	165	7.79
8/24/2009	2:30	19.51	165	7.76
8/24/2009	2:45	19.45	165	7.79
8/24/2009	3:00	19.40	165	7.79
8/24/2009	3:15	19.35	165	7.82
8/24/2009	3:30	19.31	165	7.79
8/24/2009	3:45	19.25	165	7.80
8/24/2009	4:00	19.21	165	7.77
8/24/2009	4:15	19.15	165	7.80
8/24/2009	4:30	19.11	164	7.78
8/24/2009	4:45	19.07	165	7.80
8/24/2009	5:00	19.01	165	7.81
8/24/2009	5:15	18.98	164	7.80
8/24/2009	5:30	18.93	165	7.79
8/24/2009	5:45	18.89	165	7.77
8/24/2009	6:00	18.85	165	7.79
8/24/2009	6:15	18.81	165	7.81



Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/24/2009	6:30	18.77	165	7.80
8/24/2009	6:45	18.73	165	7.81
8/24/2009	7:00	18.71	165	7.82
8/24/2009	7:15	18.67	165	7.84
8/24/2009	7:30	18.67	165	7.80
8/24/2009	7:45	18.66	165	7.84
8/24/2009	8:00	18.66	165	7.90
8/24/2009	8:15	18.67	165	7.91
8/24/2009	8:30	18.69	165	7.94
8/24/2009	8:45	18.73	165	7.99
8/24/2009	9:00	18.76	165	8.03
8/24/2009	9:15	18.81	165	8.03
8/24/2009	9:30	18.87	166	8.09
8/24/2009	9:45	18.94	166	8.12
8/24/2009	10:00	19.01	166	8.19
8/24/2009	10:15	19.09	166	8.22
8/24/2009	10:30	19.18	166	8.26
8/24/2009	10:45	19.25	166	8.27
8/24/2009	11:00	19.35	166	8.35
8/24/2009	11:15	19.45	166	8.36
8/24/2009	11:30	19.55	166	8.40
8/24/2009	11:45	19.66	167	8.40
8/24/2009	12:00	19.77	167	8.52
8/24/2009	12:15	19.90	167	8.52
8/24/2009	12:30	20.01	167	8.56
8/24/2009	12:45	20.15	167	8.64
8/24/2009	13:00	20.30	167	8.65
8/24/2009	13:15	20.43	167	8.72
8/24/2009	13:30	20.56	167	8.71
8/24/2009	13:45	20.69	167	8.67

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/24/2009	14:00	20.81	167	8.76
8/24/2009	14:15	20.90	167	8.70
8/24/2009	14:30	20.98	168	8.73
8/24/2009	14:45	21.07	168	8.04
8/24/2009	15:00	21.17	168	8.81
8/24/2009	15:15	21.25	168	8.84
8/24/2009	15:30	21.31	168	8.81
8/24/2009	15:45	21.36	168	8.53
8/24/2009	16:00	21.42	168	8.73
8/24/2009	16:15	21.47	168	8.80
8/24/2009	16:30	21.49	168	8.75
8/24/2009	16:45	21.52	168	8.72
8/24/2009	17:00	21.53	168	8.73
8/24/2009	17:15	21.54	168	8.67
8/24/2009	17:30	21.52	168	8.62
8/24/2009	17:45	21.51	168	8.56
8/24/2009	18:00	21.47	168	8.52
8/24/2009	18:15	21.42	168	8.44
8/24/2009	18:30	21.37	168	8.37
8/24/2009	18:45	21.31	168	8.31
8/24/2009	19:00	21.26	168	8.24
8/24/2009	19:15	21.21	168	8.15
8/24/2009	19:30	21.15	168	8.13
8/24/2009	19:45	21.10	168	8.10
8/24/2009	20:00	21.05	168	8.03
8/24/2009	20:15	21.00	168	7.95
8/24/2009	20:30	20.95	169	7.88
8/24/2009	20:45	20.91	169	7.88
8/24/2009	21:00	20.87	169	7.81
8/24/2009	21:15	20.84	169	7.77

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/24/2009	21:30	20.81	169	7.77
8/24/2009	21:45	20.78	169	7.74
8/24/2009	22:00	20.75	169	7.73
8/24/2009	22:15	20.71	169	7.74
8/24/2009	22:30	20.69	169	7.72
8/24/2009	22:45	20.65	169	7.69
8/24/2009	23:00	20.62	169	7.69
8/24/2009	23:15	20.58	169	7.65
8/24/2009	23:30	20.55	169	7.64
8/24/2009	23:45	20.51	169	7.63
8/25/2009	0:00	20.48	169	7.56
8/25/2009	0:15	20.45	169	7.62
8/25/2009	0:30	20.42	169	7.59
8/25/2009	0:45	20.39	169	7.55
8/25/2009	1:00	20.36	170	7.57
8/25/2009	1:15	20.33	170	7.53
8/25/2009	1:30	20.29	170	7.52
8/25/2009	1:45	20.27	170	7.49
8/25/2009	2:00	20.23	170	7.54
8/25/2009	2:15	20.20	170	7.52
8/25/2009	2:30	20.17	170	7.50
8/25/2009	2:45	20.13	170	7.52
8/25/2009	3:00	20.10	170	7.47
8/25/2009	3:15	20.06	170	7.47
8/25/2009	3:30	20.03	171	7.39
8/25/2009	3:45	19.98	170	7.38
8/25/2009	4:00	19.95	171	7.45
8/25/2009	4:15	19.91	171	7.46
8/25/2009	4:30	19.88	171	7.37
8/25/2009	4:45	19.85	171	7.11

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/25/2009	5:00	19.81	171	7.12
8/25/2009	5:15	19.78	171	7.10
8/25/2009	5:30	19.74	171	7.25
8/25/2009	5:45	19.70	171	6.89
8/25/2009	6:00	19.65	171	7.44
8/25/2009	6:15	19.62	171	7.43
8/25/2009	6:30	19.59	171	7.45
8/25/2009	6:45	19.56	171	7.46
8/25/2009	7:00	19.53	171	7.43
8/25/2009	7:15	19.51	171	7.49
8/25/2009	7:30	19.49	171	7.52
8/25/2009	7:45	19.47	171	7.54
8/25/2009	8:00	19.45	171	7.55
8/25/2009	8:15	19.44	171	7.56
8/25/2009	8:30	19.45	171	7.62
8/25/2009	8:45	19.46	172	7.62
8/25/2009	9:00	19.49	172	7.65
8/25/2009	9:15	19.54	172	7.70
8/25/2009	9:30	19.61	172	7.74
8/25/2009	9:45	19.68	172	7.80
8/25/2009	10:00	19.77	172	7.86
8/25/2009	10:15	19.85	172	7.87
8/25/2009	10:30	19.96	172	7.98
8/25/2009	10:45	20.04	173	8.00
8/25/2009	11:00	20.15	173	8.04
8/25/2009	11:15	20.25	173	8.09
8/25/2009	11:30	20.36	173	8.13
8/25/2009	11:45	20.46	173	8.18
8/25/2009	12:00	20.56	173	8.25
8/25/2009	12:15	20.66	173	8.28

<b>Date</b>	<b>Time</b>	<b>Temp (°C)</b>	<b>Specific Cond (μS/cm)</b>	<b>DO (mg/L)</b>
8/25/2009	12:30	20.77	173	8.30
8/25/2009	12:45	20.89	173	8.32
8/25/2009	13:00	21.05	173	8.38
8/25/2009	13:15	21.19	174	8.44
8/25/2009	13:30	21.37	174	8.46
8/25/2009	13:45	21.52	174	8.53
8/25/2009	14:00	21.65	174	8.53
8/25/2009	14:15	21.78	174	8.57
8/25/2009	14:30	21.90	174	8.58

**Stream**                      **Troublesome Creek**   **Station**                      **#3**   **County**   **LEWIS**

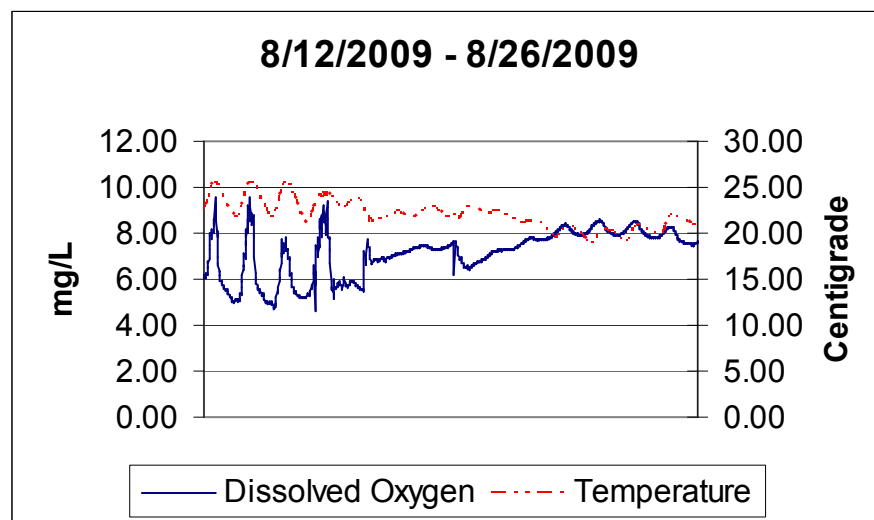
**Survey Start Date**                      08/12/09   **UTM Easting**                      592561

**Survey End Date**                      08/26/09   **UTM Northing**                      4437551

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Summary of days with minimum of 22 hours of measurements:

Average DO (mg/L):	7.13	Average Maximum DO (mg/L)	8.19	Average Minimum DO (mg/L):	6.47
% Below 5.0	1.8%	Total count of measurements:	1248		
Entire Survey:		Total count of measurements:	1338		
% Below 5.0	1.7%				



Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/12/2009	11:15	22.39	410	5.97
8/12/2009	11:30	22.66	408	6.15
8/12/2009	11:45	22.83	409	6.09
8/12/2009	12:00	22.76	410	6.05
8/12/2009	12:15	22.86	409	6.11
8/12/2009	12:30	22.92	409	6.05
8/12/2009	12:45	22.94	409	6.16
8/12/2009	13:00	23.07	410	6.24
8/12/2009	13:15	23.31	409	6.20
8/12/2009	13:30	23.34	409	6.25
8/12/2009	13:45	23.35	410	6.50
8/12/2009	14:00	23.49	410	6.56
8/12/2009	14:15	24.10	409	6.74
8/12/2009	14:30	23.88	410	6.71
8/12/2009	14:45	23.99	409	6.89
8/12/2009	15:00	24.21	409	7.28
8/12/2009	15:15	24.24	409	7.44
8/12/2009	15:30	24.49	410	7.88
8/12/2009	15:45	24.55	409	8.01
8/12/2009	16:00	24.63	409	8.01
8/12/2009	16:15	24.83	409	7.77
8/12/2009	16:30	25.08	409	8.03
8/12/2009	16:45	25.05	409	8.19
8/12/2009	17:00	25.16	410	8.04
8/12/2009	17:15	25.37	409	8.02
8/12/2009	17:30	25.17	410	8.31
8/12/2009	17:45	25.42	409	8.40
8/12/2009	18:00	25.24	410	8.45
8/12/2009	18:15	25.38	411	8.62
8/12/2009	18:30	25.38	409	8.53

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/12/2009	18:45	25.51	406	9.53
8/12/2009	19:00	25.39	406	8.59
8/12/2009	19:15	25.58	407	9.34
8/12/2009	19:30	25.47	419	8.55
8/12/2009	19:45	25.46	411	8.62
8/12/2009	20:00	25.50	416	7.79
8/12/2009	20:15	25.23	416	8.13
8/12/2009	20:30	25.37	415	8.04
8/12/2009	20:45	25.43	414	6.94
8/12/2009	21:00	25.31	414	6.70
8/12/2009	21:15	25.12	415	6.61
8/12/2009	21:30	25.02	415	6.34
8/12/2009	21:45	24.89	415	6.33
8/12/2009	22:00	24.76	416	6.16
8/12/2009	22:15	24.60	416	6.14
8/12/2009	22:30	24.48	416	5.91
8/12/2009	22:45	24.37	416	5.93
8/12/2009	23:00	24.26	417	5.87
8/12/2009	23:15	24.15	417	5.85
8/12/2009	23:30	23.95	418	5.83
8/12/2009	23:45	23.94	417	5.74
8/13/2009	0:00	23.80	417	5.70
8/13/2009	0:15	23.74	418	5.68
8/13/2009	0:30	23.59	418	5.64
8/13/2009	0:45	23.52	417	5.62
8/13/2009	1:00	23.44	418	5.61
8/13/2009	1:15	23.36	418	5.60
8/13/2009	1:30	23.28	418	5.54
8/13/2009	1:45	23.22	418	5.52
8/13/2009	2:00	23.13	418	5.53

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/13/2009	2:15	23.02	419	5.55
8/13/2009	2:30	23.01	419	5.49
8/13/2009	2:45	22.93	419	5.53
8/13/2009	3:00	22.91	419	5.46
8/13/2009	3:15	22.83	419	5.45
8/13/2009	3:30	22.82	419	5.43
8/13/2009	3:45	22.78	419	5.39
8/13/2009	4:00	22.73	419	5.37
8/13/2009	4:15	22.69	419	5.29
8/13/2009	4:30	22.65	419	5.29
8/13/2009	4:45	22.60	420	5.28
8/13/2009	5:00	22.55	420	5.28
8/13/2009	5:15	22.49	420	5.26
8/13/2009	5:30	22.43	421	5.16
8/13/2009	5:45	22.37	421	5.21
8/13/2009	6:00	22.28	421	5.16
8/13/2009	6:15	22.23	421	5.14
8/13/2009	6:30	22.16	421	5.07
8/13/2009	6:45	22.08	421	5.01
8/13/2009	7:00	22.01	422	5.03
8/13/2009	7:15	21.95	422	4.97
8/13/2009	7:30	21.89	422	5.05
8/13/2009	7:45	21.88	423	5.02
8/13/2009	8:00	21.84	421	5.02
8/13/2009	8:15	21.81	421	5.01
8/13/2009	8:30	21.80	422	5.13
8/13/2009	8:45	21.79	422	5.14
8/13/2009	9:00	21.79	422	5.15
8/13/2009	9:15	21.80	422	5.16
8/13/2009	9:30	21.81	422	5.11

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/13/2009	9:45	21.84	424	5.09
8/13/2009	10:00	21.86	424	5.09
8/13/2009	10:15	21.91	423	5.12
8/13/2009	10:30	21.96	427	5.02
8/13/2009	10:45	21.98	427	5.06
8/13/2009	11:00	22.04	425	5.10
8/13/2009	11:15	22.10	426	5.07
8/13/2009	11:30	22.18	425	5.14
8/13/2009	11:45	22.24	426	5.19
8/13/2009	12:00	22.43	426	5.40
8/13/2009	12:15	22.47	424	5.39
8/13/2009	12:30	22.51	423	5.33
8/13/2009	12:45	22.66	422	5.67
8/13/2009	13:00	22.80	422	5.88
8/13/2009	13:15	22.92	424	5.93
8/13/2009	13:30	23.04	423	6.21
8/13/2009	13:45	23.25	424	6.42
8/13/2009	14:00	23.33	423	6.45
8/13/2009	14:15	23.57	423	6.58
8/13/2009	14:30	23.58	424	6.56
8/13/2009	14:45	23.77	423	7.12
8/13/2009	15:00	24.00	424	6.85
8/13/2009	15:15	24.13	423	7.62
8/13/2009	15:30	24.29	419	7.48
8/13/2009	15:45	24.51	418	8.15
8/13/2009	16:00	24.68	419	7.79
8/13/2009	16:15	24.76	420	8.26
8/13/2009	16:30	24.94	419	7.98
8/13/2009	16:45	25.05	419	8.60
8/13/2009	17:00	25.15	421	8.17

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/13/2009	17:15	25.23	419	8.21
8/13/2009	17:30	25.32	418	9.21
8/13/2009	17:45	25.49	419	8.65
8/13/2009	18:00	25.56	419	8.51
8/13/2009	18:15	25.53	416	9.33
8/13/2009	18:30	25.48	417	9.58
8/13/2009	18:45	25.53	417	9.19
8/13/2009	19:00	25.47	419	8.68
8/13/2009	19:15	25.51	418	8.53
8/13/2009	19:30	25.57	417	8.87
8/13/2009	19:45	25.64	417	8.83
8/13/2009	20:00	25.48	420	8.49
8/13/2009	20:15	25.49	420	8.39
8/13/2009	20:30	25.45	418	8.81
8/13/2009	20:45	25.50	424	7.92
8/13/2009	21:00	25.34	425	7.91
8/13/2009	21:15	25.30	424	7.79
8/13/2009	21:30	25.49	422	7.00
8/13/2009	21:45	25.40	422	6.29
8/13/2009	22:00	25.27	422	6.13
8/13/2009	22:15	25.12	422	6.04
8/13/2009	22:30	25.00	422	5.98
8/13/2009	22:45	24.85	422	5.86
8/13/2009	23:00	24.73	423	5.81
8/13/2009	23:15	24.64	423	5.75
8/13/2009	23:30	24.47	424	5.63
8/13/2009	23:45	24.41	424	5.68
8/14/2009	0:00	24.25	426	5.57
8/14/2009	0:15	24.22	424	5.53
8/14/2009	0:30	24.08	424	5.55

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/14/2009	0:45	23.99	425	5.51
8/14/2009	1:00	23.85	425	5.53
8/14/2009	1:15	23.78	426	5.43
8/14/2009	1:30	23.68	426	5.46
8/14/2009	1:45	23.66	425	5.41
8/14/2009	2:00	23.56	426	5.33
8/14/2009	2:15	23.50	426	5.34
8/14/2009	2:30	23.40	427	5.29
8/14/2009	2:45	23.31	427	5.34
8/14/2009	3:00	23.30	426	5.42
8/14/2009	3:15	23.19	427	5.41
8/14/2009	3:30	23.12	428	5.31
8/14/2009	3:45	23.05	428	5.27
8/14/2009	4:00	23.01	428	5.09
8/14/2009	4:15	22.89	429	5.09
8/14/2009	4:30	22.79	428	5.01
8/14/2009	4:45	22.70	429	5.06
8/14/2009	5:00	22.65	429	5.07
8/14/2009	5:15	22.63	429	4.98
8/14/2009	5:30	22.51	428	5.03
8/14/2009	5:45	22.41	429	5.06
8/14/2009	6:00	22.38	430	5.07
8/14/2009	6:15	22.25	430	5.00
8/14/2009	6:30	22.19	430	4.94
8/14/2009	6:45	22.10	430	4.94
8/14/2009	7:00	22.02	430	4.92
8/14/2009	7:15	21.97	431	4.98
8/14/2009	7:30	21.89	430	4.97
8/14/2009	7:45	21.89	431	5.02
8/14/2009	8:00	21.86	431	4.99

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/14/2009	8:15	21.82	431	4.95
8/14/2009	8:30	21.89	431	4.92
8/14/2009	8:45	21.80	431	5.01
8/14/2009	9:00	21.83	431	4.91
8/14/2009	9:15	21.84	432	4.97
8/14/2009	9:30	21.87	431	5.00
8/14/2009	9:45	21.90	432	4.97
8/14/2009	10:00	21.93	432	4.88
8/14/2009	10:15	21.96	435	4.88
8/14/2009	10:30	22.04	434	4.81
8/14/2009	10:45	22.04	435	4.81
8/14/2009	11:00	22.13	436	4.67
8/14/2009	11:15	22.21	436	4.76
8/14/2009	11:30	22.17	433	4.92
8/14/2009	11:45	22.32	433	4.90
8/14/2009	12:00	22.38	432	4.96
8/14/2009	12:15	22.50	434	5.02
8/14/2009	12:30	22.59	433	5.23
8/14/2009	12:45	22.69	432	5.49
8/14/2009	13:00	22.82	431	5.51
8/14/2009	13:15	23.00	431	5.38
8/14/2009	13:30	23.10	431	5.59
8/14/2009	13:45	23.45	429	5.68
8/14/2009	14:00	23.37	431	5.92
8/14/2009	14:15	23.57	430	6.01
8/14/2009	14:30	23.86	429	6.05
8/14/2009	14:45	23.88	430	6.13
8/14/2009	15:00	23.90	431	6.40
8/14/2009	15:15	24.06	430	6.33
8/14/2009	15:30	24.27	430	6.70

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/14/2009	15:45	24.38	430	7.09
8/14/2009	16:00	24.74	427	6.93
8/14/2009	16:15	24.84	427	7.70
8/14/2009	16:30	25.22	426	7.09
8/14/2009	16:45	25.10	427	7.43
8/14/2009	17:00	25.04	429	7.26
8/14/2009	17:15	25.13	431	7.14
8/14/2009	17:30	25.21	429	7.23
8/14/2009	17:45	25.37	427	7.58
8/14/2009	18:00	25.48	427	7.42
8/14/2009	18:15	25.37	429	7.48
8/14/2009	18:30	25.42	427	7.86
8/14/2009	18:45	25.49	426	7.38
8/14/2009	19:00	25.48	429	7.41
8/14/2009	19:15	25.47	429	7.24
8/14/2009	19:30	25.39	430	7.33
8/14/2009	19:45	25.62	432	7.31
8/14/2009	20:00	25.66	427	7.29
8/14/2009	20:15	25.56	430	7.16
8/14/2009	20:30	25.36	432	6.87
8/14/2009	20:45	25.31	435	6.97
8/14/2009	21:00	25.32	437	6.90
8/14/2009	21:15	25.31	433	6.85
8/14/2009	21:30	25.37	430	6.31
8/14/2009	21:45	25.25	429	6.20
8/14/2009	22:00	25.15	429	6.21
8/14/2009	22:15	25.02	429	6.25
8/14/2009	22:30	24.92	429	5.96
8/14/2009	22:45	24.79	429	5.96
8/14/2009	23:00	24.60	431	5.78



Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/14/2009	23:15	24.45	431	5.69
8/14/2009	23:30	24.27	431	5.62
8/14/2009	23:45	24.15	431	5.58
8/15/2009	0:00	24.01	431	5.52
8/15/2009	0:15	24.01	433	5.47
8/15/2009	0:30	23.82	431	5.40
8/15/2009	0:45	23.72	431	5.38
8/15/2009	1:00	23.59	431	5.37
8/15/2009	1:15	23.48	431	5.43
8/15/2009	1:30	23.39	431	5.44
8/15/2009	1:45	23.26	432	5.44
8/15/2009	2:00	23.16	432	5.35
8/15/2009	2:15	23.06	432	5.32
8/15/2009	2:30	22.96	433	5.29
8/15/2009	2:45	22.84	433	5.28
8/15/2009	3:00	22.75	432	5.31
8/15/2009	3:15	22.60	433	5.30
8/15/2009	3:30	22.51	433	5.26
8/15/2009	3:45	22.43	433	5.22
8/15/2009	4:00	22.33	433	5.23
8/15/2009	4:15	22.21	433	5.31
8/15/2009	4:30	22.10	434	5.24
8/15/2009	4:45	22.19	432	5.22
8/15/2009	5:00	21.93	434	5.24
8/15/2009	5:15	21.87	433	5.26
8/15/2009	5:30	21.76	433	5.22
8/15/2009	5:45	21.78	436	5.25
8/15/2009	6:00	21.59	433	5.22
8/15/2009	6:15	21.54	434	5.22
8/15/2009	6:30	21.47	437	5.24

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/15/2009	6:45	21.42	435	5.21
8/15/2009	7:00	21.38	434	5.24
8/15/2009	7:15	21.28	434	5.23
8/15/2009	7:30	21.21	434	5.26
8/15/2009	7:45	21.19	435	5.24
8/15/2009	8:00	21.18	435	5.26
8/15/2009	8:15	21.17	435	5.26
8/15/2009	8:30	21.15	435	5.26
8/15/2009	8:45	21.16	435	5.26
8/15/2009	9:00	21.27	434	5.30
8/15/2009	9:15	21.25	434	5.30
8/15/2009	9:30	21.29	435	5.31
8/15/2009	9:45	21.32	436	5.40
8/15/2009	10:00	21.36	436	5.37
8/15/2009	10:15	21.39	435	5.30
8/15/2009	10:30	21.44	435	5.32
8/15/2009	10:45	21.48	435	5.40
8/15/2009	11:00	21.54	436	5.51
8/15/2009	11:15	21.62	435	5.51
8/15/2009	11:30	21.70	436	5.51
8/15/2009	11:45	21.76	436	5.62
8/15/2009	12:00	21.89	437	5.57
8/15/2009	12:15	21.96	438	5.65
8/15/2009	12:30	22.10	437	5.73
8/15/2009	12:45	22.20	437	5.75
8/15/2009	13:00	22.33	437	5.94
8/15/2009	13:15	22.40	437	6.05
8/15/2009	13:30	22.56	436	6.20
8/15/2009	13:45	22.60	436	6.30
8/15/2009	14:00	22.70	437	6.60

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/15/2009	14:15	22.85	437	6.24
8/15/2009	14:30	23.01	437	4.57
8/15/2009	14:45	23.01	439	6.36
8/15/2009	15:00	23.28	438	5.72
8/15/2009	15:15	23.32	436	6.27
8/15/2009	15:30	23.47	436	7.48
8/15/2009	15:45	23.61	436	7.22
8/15/2009	16:00	23.73	437	7.85
8/15/2009	16:15	23.66	437	7.41
8/15/2009	16:30	23.90	435	6.98
8/15/2009	16:45	23.81	437	7.17
8/15/2009	17:00	24.04	437	7.50
8/15/2009	17:15	24.13	436	7.36
8/15/2009	17:30	24.28	434	8.57
8/15/2009	17:45	24.20	436	8.22
8/15/2009	18:00	24.28	436	8.17
8/15/2009	18:15	24.13	436	8.55
8/15/2009	18:30	24.34	434	8.74
8/15/2009	18:45	24.29	436	8.20
8/15/2009	19:00	24.38	434	7.81
8/15/2009	19:15	24.00	437	8.16
8/15/2009	19:30	24.47	433	8.43
8/15/2009	19:45	24.51	434	9.22
8/15/2009	20:00	24.54	433	8.69
8/15/2009	20:15	24.39	435	8.49
8/15/2009	20:30	24.47	433	8.55
8/15/2009	20:45	24.48	432	8.93
8/15/2009	21:00	24.43	435	8.65
8/15/2009	21:15	24.43	438	8.36
8/15/2009	21:30	24.21	441	7.98

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/15/2009	21:45	24.41	439	7.88
8/15/2009	22:00	24.39	437	8.69
8/15/2009	22:15	24.31	438	8.76
8/15/2009	22:30	24.33	435	9.31
8/15/2009	22:45	24.35	438	9.37
8/15/2009	23:00	24.29	437	9.12
8/15/2009	23:15	24.30	439	8.60
8/15/2009	23:30	24.29	444	8.04
8/15/2009	23:45	24.27	444	7.85
8/16/2009	0:00	24.21	446	7.72
8/16/2009	0:15	24.24	442	7.83
8/16/2009	0:30	24.18	445	7.33
8/16/2009	0:45	24.15	445	7.20
8/16/2009	1:00	24.01	447	6.70
8/16/2009	1:15	24.17	443	5.95
8/16/2009	1:30	24.10	444	5.61
8/16/2009	1:45	24.07	445	5.61
8/16/2009	2:00	24.01	443	5.58
8/16/2009	2:15	23.98	443	5.55
8/16/2009	2:30	23.93	440	5.36
8/16/2009	2:45	23.87	441	5.34
8/16/2009	3:00	23.80	440	5.11
8/16/2009	3:15	23.72	444	5.96
8/16/2009	3:30	23.65	430	5.74
8/16/2009	3:45	23.55	428	5.57
8/16/2009	4:00	23.47	427	5.62
8/16/2009	4:15	23.42	422	5.62
8/16/2009	4:30	23.33	420	5.64
8/16/2009	4:45	23.28	422	5.68
8/16/2009	5:00	23.25	420	5.56

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/16/2009	5:15	23.19	420	5.70
8/16/2009	5:30	23.11	415	5.76
8/16/2009	5:45	23.10	415	5.84
8/16/2009	6:00	23.06	412	5.85
8/16/2009	6:15	23.02	415	5.66
8/16/2009	6:30	22.98	410	5.81
8/16/2009	6:45	22.92	408	5.87
8/16/2009	7:00	22.89	406	5.86
8/16/2009	7:15	22.86	405	5.85
8/16/2009	7:30	22.85	404	5.80
8/16/2009	7:45	22.84	404	5.76
8/16/2009	8:00	22.83	405	5.74
8/16/2009	8:15	22.83	405	5.72
8/16/2009	8:30	22.83	407	5.65
8/16/2009	8:45	22.83	407	5.60
8/16/2009	9:00	22.84	406	5.60
8/16/2009	9:15	22.81	392	5.83
8/16/2009	9:30	22.81	387	5.94
8/16/2009	9:45	22.81	378	6.11
8/16/2009	10:00	22.82	375	6.13
8/16/2009	10:15	22.84	380	5.91
8/16/2009	10:30	22.84	383	5.96
8/16/2009	10:45	22.86	390	5.81
8/16/2009	11:00	22.90	396	5.75
8/16/2009	11:15	22.93	398	5.73
8/16/2009	11:30	22.96	396	5.74
8/16/2009	11:45	22.98	396	5.75
8/16/2009	12:00	22.97	395	5.71
8/16/2009	12:15	23.01	394	5.64
8/16/2009	12:30	23.07	393	5.68

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/16/2009	12:45	23.12	390	5.70
8/16/2009	13:00	23.13	388	5.71
8/16/2009	13:15	23.17	386	5.72
8/16/2009	13:30	23.26	386	5.75
8/16/2009	13:45	23.30	380	5.79
8/16/2009	14:00	23.32	377	5.85
8/16/2009	14:15	23.36	375	5.83
8/16/2009	14:30	23.46	373	5.89
8/16/2009	14:45	23.53	372	5.90
8/16/2009	15:00	23.58	369	5.93
8/16/2009	15:15	23.64	361	5.94
8/16/2009	15:30	23.59	357	5.92
8/16/2009	15:45	23.56	354	5.91
8/16/2009	16:00	23.56	347	5.90
8/16/2009	16:15	23.62	346	5.91
8/16/2009	16:30	23.64	344	5.88
8/16/2009	16:45	23.63	343	5.86
8/16/2009	17:00	23.67	340	5.87
8/16/2009	17:15	23.71	340	5.85
8/16/2009	17:30	23.70	337	5.86
8/16/2009	17:45	23.69	339	5.80
8/16/2009	18:00	23.68	339	5.78
8/16/2009	18:15	23.69	339	5.77
8/16/2009	18:30	23.68	337	5.75
8/16/2009	18:45	23.68	338	5.71
8/16/2009	19:00	23.67	339	5.71
8/16/2009	19:15	23.66	339	5.69
8/16/2009	19:30	23.65	338	5.69
8/16/2009	19:45	23.63	340	5.68
8/16/2009	20:00	23.62	339	5.68

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/16/2009	20:15	23.61	341	5.66
8/16/2009	20:30	23.60	341	5.64
8/16/2009	20:45	23.58	341	5.62
8/16/2009	21:00	23.56	342	5.58
8/16/2009	21:15	23.53	343	5.59
8/16/2009	21:30	23.51	343	5.59
8/16/2009	21:45	23.49	343	5.57
8/16/2009	22:00	23.47	343	5.57
8/16/2009	22:15	23.44	343	5.56
8/16/2009	22:30	23.40	343	5.55
8/16/2009	22:45	23.37	344	5.54
8/16/2009	23:00	23.33	344	5.55
8/16/2009	23:15	23.31	344	5.50
8/16/2009	23:30	23.30	344	5.48
8/16/2009	23:45	22.79	277	6.86
8/17/2009	0:00	22.45	213	7.19
8/17/2009	0:15	22.60	236	6.87
8/17/2009	0:30	22.49	242	6.63
8/17/2009	0:45	22.43	249	6.74
8/17/2009	1:00	22.39	247	6.82
8/17/2009	1:15	22.32	250	7.05
8/17/2009	1:30	21.92	179	7.70
8/17/2009	1:45	21.91	175	7.57
8/17/2009	2:00	21.75	148	7.60
8/17/2009	2:15	21.59	119	7.54
8/17/2009	2:30	21.44	102	7.47
8/17/2009	2:45	21.39	94	7.43
8/17/2009	3:00	21.34	100	7.37
8/17/2009	3:15	21.31	116	7.30
8/17/2009	3:30	21.34	123	7.22

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/17/2009	3:45	21.50	152	7.05
8/17/2009	4:00	21.57	163	6.85
8/17/2009	4:15	21.44	141	6.81
8/17/2009	4:30	21.41	140	6.72
8/17/2009	4:45	21.40	136	6.70
8/17/2009	5:00	21.40	129	6.70
8/17/2009	5:15	21.39	120	6.72
8/17/2009	5:30	21.37	117	6.72
8/17/2009	5:45	21.35	113	6.76
8/17/2009	6:00	21.34	110	6.83
8/17/2009	6:15	21.34	109	6.85
8/17/2009	6:30	21.35	111	6.85
8/17/2009	6:45	21.36	112	6.86
8/17/2009	7:00	21.37	113	6.86
8/17/2009	7:15	21.37	116	6.85
8/17/2009	7:30	21.37	118	6.84
8/17/2009	7:45	21.36	117	6.86
8/17/2009	8:00	21.36	116	6.87
8/17/2009	8:15	21.37	120	6.88
8/17/2009	8:30	21.39	123	6.83
8/17/2009	8:45	21.40	123	6.84
8/17/2009	9:00	21.42	124	6.82
8/17/2009	9:15	21.44	125	6.80
8/17/2009	9:30	21.47	126	6.80
8/17/2009	9:45	21.50	129	6.81
8/17/2009	10:00	21.53	132	6.83
8/17/2009	10:15	21.55	134	6.85
8/17/2009	10:30	21.57	136	6.86
8/17/2009	10:45	21.59	139	6.89
8/17/2009	11:00	21.60	138	6.91

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/17/2009	11:15	21.62	139	6.93
8/17/2009	11:30	21.63	140	6.94
8/17/2009	11:45	21.65	140	6.96
8/17/2009	12:00	21.67	140	6.97
8/17/2009	12:15	21.69	140	6.95
8/17/2009	12:30	21.71	142	6.94
8/17/2009	12:45	21.73	146	6.90
8/17/2009	13:00	21.77	153	6.88
8/17/2009	13:15	21.81	159	6.84
8/17/2009	13:30	21.83	161	6.81
8/17/2009	13:45	21.85	161	6.77
8/17/2009	14:00	21.86	157	6.76
8/17/2009	14:15	21.85	148	6.79
8/17/2009	14:30	21.82	140	6.81
8/17/2009	14:45	21.79	136	6.87
8/17/2009	15:00	21.77	133	6.90
8/17/2009	15:15	21.77	132	6.93
8/17/2009	15:30	21.78	133	6.92
8/17/2009	15:45	21.81	133	6.93
8/17/2009	16:00	21.85	135	6.93
8/17/2009	16:15	21.88	139	6.94
8/17/2009	16:30	21.90	142	6.93
8/17/2009	16:45	21.90	145	6.93
8/17/2009	17:00	21.91	144	6.92
8/17/2009	17:15	21.91	143	6.91
8/17/2009	17:30	21.91	141	6.94
8/17/2009	17:45	21.92	138	6.95
8/17/2009	18:00	21.92	136	7.00
8/17/2009	18:15	21.94	137	7.01
8/17/2009	18:30	21.98	137	7.02

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/17/2009	18:45	22.01	137	7.01
8/17/2009	19:00	22.05	138	7.03
8/17/2009	19:15	22.08	138	7.05
8/17/2009	19:30	22.12	138	7.03
8/17/2009	19:45	22.16	138	7.04
8/17/2009	20:00	22.21	139	7.06
8/17/2009	20:15	22.24	139	7.05
8/17/2009	20:30	22.26	140	7.07
8/17/2009	20:45	22.29	140	7.07
8/17/2009	21:00	22.32	142	7.09
8/17/2009	21:15	22.33	143	7.08
8/17/2009	21:30	22.35	143	7.09
8/17/2009	21:45	22.36	144	7.10
8/17/2009	22:00	22.36	144	7.08
8/17/2009	22:15	22.36	144	7.09
8/17/2009	22:30	22.36	144	7.10
8/17/2009	22:45	22.35	144	7.11
8/17/2009	23:00	22.34	144	7.11
8/17/2009	23:15	22.32	145	7.10
8/17/2009	23:30	22.29	145	7.12
8/17/2009	23:45	22.26	146	7.12
8/18/2009	0:00	22.24	148	7.11
8/18/2009	0:15	22.22	149	7.13
8/18/2009	0:30	22.19	149	7.11
8/18/2009	0:45	22.17	149	7.13
8/18/2009	1:00	22.15	149	7.14
8/18/2009	1:15	22.13	149	7.14
8/18/2009	1:30	22.11	149	7.15
8/18/2009	1:45	22.08	148	7.15
8/18/2009	2:00	22.06	147	7.17

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/18/2009	2:15	22.03	147	7.17
8/18/2009	2:30	22.01	147	7.18
8/18/2009	2:45	21.99	147	7.18
8/18/2009	3:00	21.97	147	7.18
8/18/2009	3:15	21.95	147	7.17
8/18/2009	3:30	21.93	147	7.19
8/18/2009	3:45	21.91	147	7.19
8/18/2009	4:00	21.89	148	7.18
8/18/2009	4:15	21.87	149	7.19
8/18/2009	4:30	21.85	149	7.18
8/18/2009	4:45	21.84	150	7.18
8/18/2009	5:00	21.83	150	7.19
8/18/2009	5:15	21.81	149	7.21
8/18/2009	5:30	21.80	148	7.22
8/18/2009	5:45	21.79	148	7.23
8/18/2009	6:00	21.77	147	7.23
8/18/2009	6:15	21.76	147	7.24
8/18/2009	6:30	21.75	147	7.24
8/18/2009	6:45	21.73	148	7.25
8/18/2009	7:00	21.72	148	7.25
8/18/2009	7:15	21.71	148	7.27
8/18/2009	7:30	21.71	148	7.28
8/18/2009	7:45	21.71	148	7.29
8/18/2009	8:00	21.72	148	7.30
8/18/2009	8:15	21.71	148	7.31
8/18/2009	8:30	21.71	148	7.32
8/18/2009	8:45	21.71	149	7.33
8/18/2009	9:00	21.71	149	7.35
8/18/2009	9:15	21.72	149	7.35
8/18/2009	9:30	21.73	150	7.36

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/18/2009	9:45	21.73	150	7.36
8/18/2009	10:00	21.76	151	7.36
8/18/2009	10:15	21.77	151	7.36
8/18/2009	10:30	21.79	152	7.38
8/18/2009	10:45	21.81	152	7.37
8/18/2009	11:00	21.82	153	7.37
8/18/2009	11:15	21.84	153	7.38
8/18/2009	11:30	21.85	154	7.38
8/18/2009	11:45	21.89	154	7.38
8/18/2009	12:00	21.93	155	7.40
8/18/2009	12:15	21.98	155	7.40
8/18/2009	12:30	22.03	155	7.41
8/18/2009	12:45	22.06	156	7.41
8/18/2009	13:00	22.11	157	7.43
8/18/2009	13:15	22.15	157	7.43
8/18/2009	13:30	22.22	157	7.43
8/18/2009	13:45	22.26	158	7.44
8/18/2009	14:00	22.28	158	7.46
8/18/2009	14:15	22.33	159	7.45
8/18/2009	14:30	22.35	159	7.45
8/18/2009	14:45	22.39	159	7.46
8/18/2009	15:00	22.42	160	7.46
8/18/2009	15:15	22.45	160	7.47
8/18/2009	15:30	22.50	161	7.47
8/18/2009	15:45	22.54	161	7.49
8/18/2009	16:00	22.59	162	7.47
8/18/2009	16:15	22.61	162	7.47
8/18/2009	16:30	22.62	162	7.48
8/18/2009	16:45	22.65	163	7.47
8/18/2009	17:00	22.66	163	7.46

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/18/2009	17:15	22.68	163	7.45
8/18/2009	17:30	22.71	164	7.46
8/18/2009	17:45	22.74	164	7.45
8/18/2009	18:00	22.75	164	7.44
8/18/2009	18:15	22.78	164	7.44
8/18/2009	18:30	22.80	165	7.44
8/18/2009	18:45	22.82	165	7.42
8/18/2009	19:00	22.81	165	7.43
8/18/2009	19:15	22.82	165	7.42
8/18/2009	19:30	22.82	165	7.40
8/18/2009	19:45	22.83	165	7.39
8/18/2009	20:00	22.85	165	7.40
8/18/2009	20:15	22.85	166	7.39
8/18/2009	20:30	22.86	166	7.37
8/18/2009	20:45	22.87	167	7.35
8/18/2009	21:00	22.86	164	7.34
8/18/2009	21:15	22.87	164	7.35
8/18/2009	21:30	22.88	164	7.34
8/18/2009	21:45	22.87	164	7.34
8/18/2009	22:00	22.85	164	7.34
8/18/2009	22:15	22.83	164	7.34
8/18/2009	22:30	22.82	164	7.34
8/18/2009	22:45	22.81	164	7.33
8/18/2009	23:00	22.79	165	7.33
8/18/2009	23:15	22.76	165	7.33
8/18/2009	23:30	22.75	165	7.33
8/18/2009	23:45	22.73	165	7.33
8/19/2009	0:00	22.71	165	7.33
8/19/2009	0:15	22.69	165	7.32
8/19/2009	0:30	22.67	166	7.31

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/19/2009	0:45	22.65	166	7.31
8/19/2009	1:00	22.63	166	7.31
8/19/2009	1:15	22.59	166	7.32
8/19/2009	1:30	22.58	166	7.32
8/19/2009	1:45	22.54	166	7.31
8/19/2009	2:00	22.50	166	7.32
8/19/2009	2:15	22.48	166	7.32
8/19/2009	2:30	22.44	167	7.31
8/19/2009	2:45	22.41	167	7.31
8/19/2009	3:00	22.37	167	7.31
8/19/2009	3:15	22.35	167	7.33
8/19/2009	3:30	22.30	167	7.33
8/19/2009	3:45	22.27	167	7.33
8/19/2009	4:00	22.24	167	7.35
8/19/2009	4:15	22.20	168	7.32
8/19/2009	4:30	22.18	168	7.33
8/19/2009	4:45	22.14	168	7.35
8/19/2009	5:00	22.10	168	7.33
8/19/2009	5:15	22.06	168	7.35
8/19/2009	5:30	22.02	168	7.36
8/19/2009	5:45	21.99	168	7.36
8/19/2009	6:00	21.96	169	7.37
8/19/2009	6:15	21.93	169	7.36
8/19/2009	6:30	21.88	169	7.37
8/19/2009	6:45	21.85	169	7.36
8/19/2009	7:00	21.81	169	7.38
8/19/2009	7:15	21.78	170	7.38
8/19/2009	7:30	21.77	170	7.39
8/19/2009	7:45	21.74	170	7.41
8/19/2009	8:00	21.74	170	7.41

Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/19/2009	8:15	21.72	171	7.41
8/19/2009	8:30	21.71	171	7.44
8/19/2009	8:45	21.72	171	7.46
8/19/2009	9:00	21.71	171	7.46
8/19/2009	9:15	21.71	171	7.47
8/19/2009	9:30	21.72	171	7.46
8/19/2009	9:45	21.73	171	7.49
8/19/2009	10:00	21.73	171	7.50
8/19/2009	10:15	21.74	172	7.50
8/19/2009	10:30	21.75	172	7.52
8/19/2009	10:45	21.77	172	7.54
8/19/2009	11:00	21.78	172	7.56
8/19/2009	11:15	21.82	172	7.56
8/19/2009	11:30	21.82	172	7.58
8/19/2009	11:45	21.85	173	7.57
8/19/2009	12:00	21.85	173	7.57
8/19/2009	12:15	21.86	170	7.61
8/19/2009	12:30	21.83	161	7.64
8/19/2009	12:45	21.84	160	7.64
8/19/2009	13:00	21.88	155	6.18
8/19/2009	13:15	21.97	154	7.62
8/19/2009	13:30	22.19	144	7.55
8/19/2009	13:45	22.24	139	7.51
8/19/2009	14:00	22.40	130	7.47
8/19/2009	14:15	22.41	130	7.44
8/19/2009	14:30	22.31	130	7.38
8/19/2009	14:45	22.35	139	7.41
8/19/2009	15:00	22.32	147	7.34
8/19/2009	15:15	22.09	140	7.26
8/19/2009	15:30	21.92	119	7.09

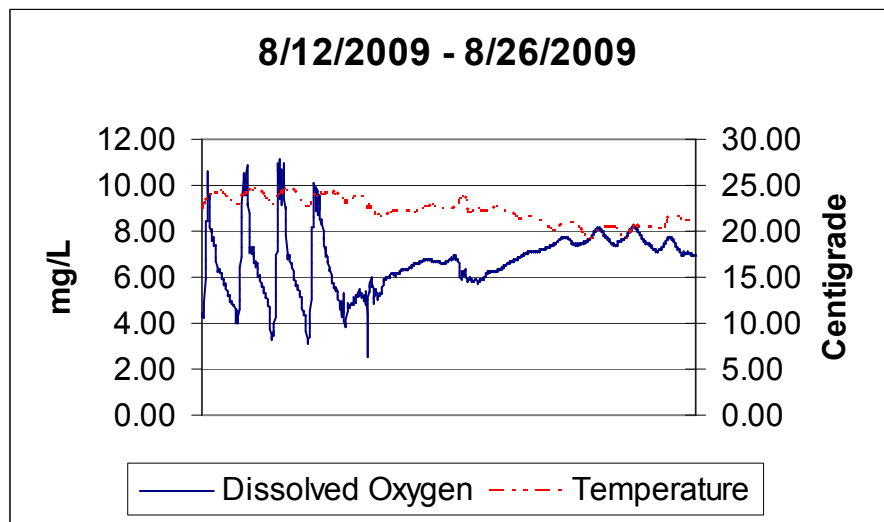
Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/19/2009	15:45	21.75	105	7.02
8/19/2009	16:00	21.60	95	6.96
8/19/2009	16:15	21.56	86	6.88
8/19/2009	16:30	21.58	85	6.85
8/19/2009	16:45	21.60	85	6.85
8/19/2009	17:00	21.64	81	6.89
8/19/2009	17:15	21.69	77	6.92
8/19/2009	17:30	21.77	78	6.93
8/19/2009	17:45	21.86	81	6.91
8/19/2009	18:00	21.95	85	6.85
8/19/2009	18:15	22.02	86	6.78
8/19/2009	18:30	22.07	88	6.71
8/19/2009	18:45	22.13	87	6.67
8/19/2009	19:00	22.21	87	6.63
8/19/2009	19:15	22.27	88	6.61
8/19/2009	19:30	22.33	90	6.56
8/19/2009	19:45	22.40	92	6.53
8/19/2009	20:00	22.46	92	6.51
8/19/2009	20:15	22.53	93	6.52
8/19/2009	20:30	22.61	94	6.53
8/19/2009	20:45	22.69	96	6.56
8/19/2009	21:00	22.73	97	6.56
8/19/2009	21:15	22.76	98	6.57
8/19/2009	21:30	22.80	101	6.56
8/19/2009	21:45	22.82	105	6.56
8/19/2009	22:00	22.84	107	6.54
8/19/2009	22:15	22.84	109	6.50
8/19/2009	22:30	22.84	113	6.47
8/19/2009	22:45	22.83	115	6.46
8/19/2009	23:00	22.81	114	6.47



Date	Time	Temp (°C)	Specific Cond (μS/cm)	DO (mg/L)
8/19/2009	23:15	22.77	109	6.47
8/19/2009	23:30	22.74	104	6.48
8/19/2009	23:45	22.72	103	6.51
8/20/2009	0:00	22.70	103	6.54
8/20/2009	0:15	22.68	104	6.56
8/20/2009	0:30	22.67	104	6.58
8/20/2009	0:45	22.66	105	6.59
8/20/2009	1:00	22.65	106	6.62
8/20/2009	1:15	22.63	108	6.63
8/20/2009	1:30	22.61	110	6.65
8/20/2009	1:45	22.60	110	6.62
8/20/2009	2:00	22.58	109	6.64
8/20/2009	2:15	22.57	109	6.66
8/20/2009	2:30	22.57	109	6.66
8/20/2009	2:45	22.57	109	6.69
8/20/2009	3:00	22.57	110	6.71
8/20/2009	3:15	22.58	111	6.71
8/20/2009	3:30	22.58	113	6.72
8/20/2009	3:45	22.57	114	6.73
8/20/2009	4:00	22.57	114	6.73
8/20/2009	4:15	22.55	116	6.78

<b>Stream</b>	<b>Troublesome Creek</b>	<b>Station</b>	<b>#2</b>	<b>County</b>	<b>LEWIS</b>
<b>Survey Start Date</b>	08/12/09	<b>UTM Easting</b>	598636		
<b>Survey End Date</b>	08/26/09	<b>UTM Northing</b>	4428209		

Summary of days with minimum of 22 hours of measurements:					
Average DO (mg/L):	6.68	Average Maximum DO (mg/L)	8.02	Average Minimum DO (mg/L):	5.39
% Below 5.0	9.8%	Total count of measurements:	1248		
Entire Survey:		Total count of measurements:	1338		
% Below 5.0	9.7%				



Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/12/2009	10:15	22.57	447	4.28
8/12/2009	10:30	22.52	448	4.33
8/12/2009	10:45	22.50	448	4.41
8/12/2009	11:00	22.57	449	4.25
8/12/2009	11:15	22.58	449	4.22
8/12/2009	11:30	22.74	448	4.49
8/12/2009	11:45	22.75	448	4.68
8/12/2009	12:00	22.87	447	4.91
8/12/2009	12:15	22.96	447	5.88
8/12/2009	12:30	23.06	446	6.46
8/12/2009	12:45	23.12	447	6.72
8/12/2009	13:00	23.25	446	6.75
8/12/2009	13:15	23.29	446	8.03
8/12/2009	13:30	23.22	447	8.43
8/12/2009	13:45	23.38	445	8.46
8/12/2009	14:00	23.48	445	9.38
8/12/2009	14:15	23.59	447	10.58
8/12/2009	14:30	23.58	447	9.92
8/12/2009	14:45	23.62	447	9.65
8/12/2009	15:00	23.67	446	9.41
8/12/2009	15:15	23.73	447	9.58
8/12/2009	15:30	23.77	447	9.06
8/12/2009	15:45	23.65	448	8.42
8/12/2009	16:00	23.92	448	8.14
8/12/2009	16:15	23.98	448	7.93
8/12/2009	16:30	23.89	448	8.01
8/12/2009	16:45	23.98	448	8.11
8/12/2009	17:00	24.11	447	7.88
8/12/2009	17:15	24.06	448	7.74
8/12/2009	17:30	24.23	447	7.54
8/12/2009	17:45	24.28	448	7.75

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/12/2009	18:00	24.24	448	7.57
8/12/2009	18:15	24.17	448	7.50
8/12/2009	18:30	24.25	448	7.39
8/12/2009	18:45	24.28	448	7.41
8/12/2009	19:00	24.40	448	7.39
8/12/2009	19:15	24.18	449	7.35
8/12/2009	19:30	24.26	448	7.18
8/12/2009	19:45	24.14	449	6.84
8/12/2009	20:00	24.16	449	6.74
8/12/2009	20:15	24.14	449	6.66
8/12/2009	20:30	24.21	449	6.44
8/12/2009	20:45	24.24	448	6.34
8/12/2009	21:00	24.31	449	6.25
8/12/2009	21:15	24.32	448	6.24
8/12/2009	21:30	24.38	448	6.30
8/12/2009	21:45	24.44	448	6.31
8/12/2009	22:00	24.35	448	6.31
8/12/2009	22:15	24.35	448	6.26
8/12/2009	22:30	24.39	448	6.22
8/12/2009	22:45	24.43	448	6.15
8/12/2009	23:00	24.27	448	6.14
8/12/2009	23:15	24.39	448	6.15
8/12/2009	23:30	24.37	448	6.08
8/12/2009	23:45	24.32	448	6.00
8/13/2009	0:00	24.25	449	5.98
8/13/2009	0:15	24.22	448	5.92
8/13/2009	0:30	24.19	449	5.88
8/13/2009	0:45	24.15	449	5.87
8/13/2009	1:00	24.07	449	5.86
8/13/2009	1:15	24.00	449	5.74
8/13/2009	1:30	23.98	449	5.66

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/13/2009	1:45	23.93	449	5.71
8/13/2009	2:00	23.91	449	5.61
8/13/2009	2:15	23.87	449	5.64
8/13/2009	2:30	23.87	449	5.61
8/13/2009	2:45	23.80	449	5.56
8/13/2009	3:00	23.78	449	5.52
8/13/2009	3:15	23.63	450	5.42
8/13/2009	3:30	23.56	451	5.26
8/13/2009	3:45	23.61	450	5.19
8/13/2009	4:00	23.59	450	5.25
8/13/2009	4:15	23.56	450	5.26
8/13/2009	4:30	23.50	450	5.26
8/13/2009	4:45	23.46	450	5.21
8/13/2009	5:00	23.41	450	5.16
8/13/2009	5:15	23.35	450	5.04
8/13/2009	5:30	23.31	451	5.00
8/13/2009	5:45	23.28	450	5.00
8/13/2009	6:00	23.22	451	4.96
8/13/2009	6:15	23.17	451	4.95
8/13/2009	6:30	23.13	450	4.87
8/13/2009	6:45	23.09	450	4.89
8/13/2009	7:00	23.04	450	4.86
8/13/2009	7:15	23.00	451	4.76
8/13/2009	7:30	22.96	450	4.80
8/13/2009	7:45	22.92	450	4.80
8/13/2009	8:00	22.89	450	4.82
8/13/2009	8:15	22.87	450	4.82
8/13/2009	8:30	22.77	450	4.62
8/13/2009	8:45	22.76	451	4.04
8/13/2009	9:00	22.79	450	4.09
8/13/2009	9:15	22.77	450	4.08

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/13/2009	9:30	22.78	450	4.44
8/13/2009	9:45	22.72	451	4.64
8/13/2009	10:00	22.72	451	4.49
8/13/2009	10:15	22.73	450	3.98
8/13/2009	10:30	22.73	450	4.36
8/13/2009	10:45	22.75	450	4.04
8/13/2009	11:00	22.72	450	4.30
8/13/2009	11:15	22.87	451	4.57
8/13/2009	11:30	22.90	450	4.98
8/13/2009	11:45	22.94	450	5.03
8/13/2009	12:00	23.05	450	5.44
8/13/2009	12:15	23.17	450	6.09
8/13/2009	12:30	23.30	450	6.40
8/13/2009	12:45	23.41	450	6.85
8/13/2009	13:00	23.57	450	7.30
8/13/2009	13:15	23.71	449	7.93
8/13/2009	13:30	23.68	449	8.60
8/13/2009	13:45	23.62	449	9.22
8/13/2009	14:00	23.86	448	10.23
8/13/2009	14:15	24.03	449	10.53
8/13/2009	14:30	24.03	449	9.59
8/13/2009	14:45	23.98	448	10.20
8/13/2009	15:00	24.06	448	10.45
8/13/2009	15:15	24.18	448	9.72
8/13/2009	15:30	24.27	447	10.30
8/13/2009	15:45	24.24	448	10.16
8/13/2009	16:00	24.16	448	9.59
8/13/2009	16:15	24.27	448	10.09
8/13/2009	16:30	24.32	447	10.40
8/13/2009	16:45	24.49	446	10.85
8/13/2009	17:00	24.49	448	9.96

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/13/2009	17:15	24.46	448	9.11
8/13/2009	17:30	24.64	448	9.19
8/13/2009	17:45	24.55	448	9.15
8/13/2009	18:00	24.62	448	8.80
8/13/2009	18:15	24.47	449	8.13
8/13/2009	18:30	24.60	448	8.02
8/13/2009	18:45	24.61	449	7.78
8/13/2009	19:00	24.44	451	7.08
8/13/2009	19:15	24.45	450	7.33
8/13/2009	19:30	24.64	449	7.03
8/13/2009	19:45	24.41	450	7.01
8/13/2009	20:00	24.36	449	7.16
8/13/2009	20:15	24.39	449	7.21
8/13/2009	20:30	24.44	449	7.29
8/13/2009	20:45	24.56	449	7.32
8/13/2009	21:00	24.44	450	7.07
8/13/2009	21:15	24.64	449	6.84
8/13/2009	21:30	24.71	448	7.01
8/13/2009	21:45	24.61	449	6.75
8/13/2009	22:00	24.56	449	6.63
8/13/2009	22:15	24.63	449	6.65
8/13/2009	22:30	24.65	449	6.70
8/13/2009	22:45	24.62	449	6.52
8/13/2009	23:00	24.58	449	6.41
8/13/2009	23:15	24.61	450	6.56
8/13/2009	23:30	24.77	447	6.57
8/13/2009	23:45	24.57	449	6.41
8/14/2009	0:00	24.53	449	6.38
8/14/2009	0:15	24.60	448	6.14
8/14/2009	0:30	24.55	448	6.02
8/14/2009	0:45	24.50	449	6.05

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/14/2009	1:00	24.50	448	6.13
8/14/2009	1:15	24.51	448	6.06
8/14/2009	1:30	24.43	448	5.95
8/14/2009	1:45	24.33	449	5.89
8/14/2009	2:00	24.42	448	5.83
8/14/2009	2:15	24.23	449	5.78
8/14/2009	2:30	24.19	449	5.78
8/14/2009	2:45	24.23	448	5.65
8/14/2009	3:00	24.18	449	5.60
8/14/2009	3:15	24.05	449	5.61
8/14/2009	3:30	24.01	450	5.55
8/14/2009	3:45	24.00	449	5.49
8/14/2009	4:00	23.92	450	5.44
8/14/2009	4:15	23.88	449	5.41
8/14/2009	4:30	23.83	450	5.35
8/14/2009	4:45	23.77	450	5.32
8/14/2009	5:00	23.71	450	5.31
8/14/2009	5:15	23.66	450	5.18
8/14/2009	5:30	23.61	451	5.16
8/14/2009	5:45	23.51	451	5.11
8/14/2009	6:00	23.49	451	5.10
8/14/2009	6:15	23.44	451	5.04
8/14/2009	6:30	23.37	451	4.99
8/14/2009	6:45	23.32	451	4.95
8/14/2009	7:00	23.23	451	4.81
8/14/2009	7:15	23.22	451	4.76
8/14/2009	7:30	23.17	451	4.71
8/14/2009	7:45	23.11	452	4.66
8/14/2009	8:00	23.08	452	4.59
8/14/2009	8:15	23.04	452	4.42
8/14/2009	8:30	23.00	452	4.18

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/14/2009	8:45	22.94	453	3.74
8/14/2009	9:00	22.91	453	3.48
8/14/2009	9:15	22.94	454	3.40
8/14/2009	9:30	22.90	454	3.32
8/14/2009	9:45	22.86	454	3.31
8/14/2009	10:00	22.88	455	3.40
8/14/2009	10:15	22.86	453	3.66
8/14/2009	10:30	22.86	454	3.45
8/14/2009	10:45	22.85	455	3.51
8/14/2009	11:00	22.92	454	3.85
8/14/2009	11:15	22.97	455	4.00
8/14/2009	11:30	23.06	455	4.01
8/14/2009	11:45	23.19	455	4.28
8/14/2009	12:00	23.24	454	4.97
8/14/2009	12:15	23.36	454	5.26
8/14/2009	12:30	23.41	453	6.61
8/14/2009	12:45	23.49	452	6.94
8/14/2009	13:00	23.73	453	7.09
8/14/2009	13:15	23.65	454	7.55
8/14/2009	13:30	23.73	453	8.26
8/14/2009	13:45	23.78	453	8.94
8/14/2009	14:00	23.94	452	10.92
8/14/2009	14:15	23.91	454	10.58
8/14/2009	14:30	23.88	454	10.04
8/14/2009	14:45	24.03	454	11.16
8/14/2009	15:00	23.97	454	11.03
8/14/2009	15:15	24.23	456	9.39
8/14/2009	15:30	24.37	454	10.38
8/14/2009	15:45	24.09	455	10.08
8/14/2009	16:00	24.13	455	9.16
8/14/2009	16:15	24.37	454	10.69

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/14/2009	16:30	24.30	455	10.58
8/14/2009	16:45	24.20	456	10.02
8/14/2009	17:00	24.27	455	9.88
8/14/2009	17:15	24.35	454	10.44
8/14/2009	17:30	24.51	456	10.98
8/14/2009	17:45	24.47	457	10.08
8/14/2009	18:00	24.46	457	9.68
8/14/2009	18:15	24.51	457	9.39
8/14/2009	18:30	24.48	458	8.97
8/14/2009	18:45	24.55	458	9.02
8/14/2009	19:00	24.39	459	8.42
8/14/2009	19:15	24.39	459	7.96
8/14/2009	19:30	24.38	459	7.79
8/14/2009	19:45	24.39	459	7.02
8/14/2009	20:00	24.33	459	6.75
8/14/2009	20:15	24.41	458	6.98
8/14/2009	20:30	24.43	460	6.98
8/14/2009	20:45	24.46	457	6.82
8/14/2009	21:00	24.46	459	6.97
8/14/2009	21:15	24.48	458	6.99
8/14/2009	21:30	24.48	459	6.94
8/14/2009	21:45	24.49	458	6.85
8/14/2009	22:00	24.49	458	6.87
8/14/2009	22:15	24.66	459	6.72
8/14/2009	22:30	24.67	458	6.49
8/14/2009	22:45	24.46	459	6.56
8/14/2009	23:00	24.52	459	6.60
8/14/2009	23:15	24.59	460	6.45
8/14/2009	23:30	24.49	461	6.46
8/14/2009	23:45	24.45	461	6.30
8/15/2009	0:00	24.37	461	6.14

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/15/2009	0:15	24.33	461	6.10
8/15/2009	0:30	24.36	460	6.02
8/15/2009	0:45	24.28	460	5.94
8/15/2009	1:00	24.25	460	5.88
8/15/2009	1:15	24.22	460	5.79
8/15/2009	1:30	24.12	460	5.70
8/15/2009	1:45	24.09	460	5.69
8/15/2009	2:00	24.00	460	5.68
8/15/2009	2:15	23.98	460	5.64
8/15/2009	2:30	23.92	460	5.63
8/15/2009	2:45	23.88	460	5.59
8/15/2009	3:00	23.80	460	5.57
8/15/2009	3:15	23.78	460	5.52
8/15/2009	3:30	23.71	459	5.51
8/15/2009	3:45	23.65	460	5.46
8/15/2009	4:00	23.56	460	5.37
8/15/2009	4:15	23.53	460	5.22
8/15/2009	4:30	23.46	460	5.28
8/15/2009	4:45	23.43	461	5.26
8/15/2009	5:00	23.34	461	5.17
8/15/2009	5:15	23.30	461	5.10
8/15/2009	5:30	23.23	458	5.08
8/15/2009	5:45	23.20	461	4.95
8/15/2009	6:00	23.14	456	4.89
8/15/2009	6:15	23.06	461	4.69
8/15/2009	6:30	23.02	461	4.57
8/15/2009	6:45	22.97	461	4.53
8/15/2009	7:00	22.92	461	4.51
8/15/2009	7:15	22.88	462	4.51
8/15/2009	7:30	22.86	462	4.46
8/15/2009	7:45	22.80	462	4.34

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/15/2009	8:00	22.78	462	4.33
8/15/2009	8:15	22.75	463	4.37
8/15/2009	8:30	22.75	463	4.11
8/15/2009	8:45	22.71	463	3.91
8/15/2009	9:00	22.71	463	3.63
8/15/2009	9:15	22.63	464	3.32
8/15/2009	9:30	22.62	464	3.14
8/15/2009	9:45	22.61	463	3.17
8/15/2009	10:00	22.60	465	3.18
8/15/2009	10:15	22.59	465	3.25
8/15/2009	10:30	22.59	465	3.33
8/15/2009	10:45	22.60	466	3.37
8/15/2009	11:00	22.70	465	3.51
8/15/2009	11:15	22.70	466	3.85
8/15/2009	11:30	22.68	467	4.03
8/15/2009	11:45	22.74	467	4.52
8/15/2009	12:00	22.86	467	5.05
8/15/2009	12:15	22.95	467	5.39
8/15/2009	12:30	23.07	468	6.03
8/15/2009	12:45	23.22	467	6.57
8/15/2009	13:00	23.33	467	7.41
8/15/2009	13:15	23.43	467	8.16
8/15/2009	13:30	23.43	467	8.16
8/15/2009	13:45	23.59	467	8.57
8/15/2009	14:00	23.63	467	9.48
8/15/2009	14:15	23.73	466	10.12
8/15/2009	14:30	23.83	467	10.11
8/15/2009	14:45	23.81	467	9.64
8/15/2009	15:00	23.76	468	9.29
8/15/2009	15:15	23.89	466	8.90
8/15/2009	15:30	24.01	466	9.61

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/15/2009	15:45	23.94	466	9.92
8/15/2009	16:00	23.83	468	9.71
8/15/2009	16:15	23.93	468	9.33
8/15/2009	16:30	23.93	467	9.56
8/15/2009	16:45	23.99	467	9.35
8/15/2009	17:00	23.88	467	8.99
8/15/2009	17:15	24.01	467	8.72
8/15/2009	17:30	23.97	468	8.94
8/15/2009	17:45	24.10	468	9.36
8/15/2009	18:00	24.05	468	9.59
8/15/2009	18:15	24.03	469	9.22
8/15/2009	18:30	24.03	470	8.53
8/15/2009	18:45	24.10	469	8.36
8/15/2009	19:00	24.11	470	8.32
8/15/2009	19:15	24.13	469	8.34
8/15/2009	19:30	24.11	469	8.55
8/15/2009	19:45	24.01	470	8.30
8/15/2009	20:00	24.08	470	8.31
8/15/2009	20:15	24.04	470	8.04
8/15/2009	20:30	24.02	470	7.69
8/15/2009	20:45	24.04	470	7.67
8/15/2009	21:00	24.02	470	7.70
8/15/2009	21:15	24.09	471	7.37
8/15/2009	21:30	24.09	471	7.13
8/15/2009	21:45	24.14	470	7.02
8/15/2009	22:00	24.16	470	7.27
8/15/2009	22:15	24.17	471	7.07
8/15/2009	22:30	24.28	471	6.83
8/15/2009	22:45	24.14	472	7.04
8/15/2009	23:00	24.14	471	6.87
8/15/2009	23:15	24.20	471	6.73

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/15/2009	23:30	24.25	471	6.68
8/15/2009	23:45	24.27	470	6.67
8/16/2009	0:00	24.10	471	6.62
8/16/2009	0:15	24.18	466	6.42
8/16/2009	0:30	24.18	473	6.28
8/16/2009	0:45	24.28	471	6.33
8/16/2009	1:00	24.29	471	6.23
8/16/2009	1:15	24.24	472	6.36
8/16/2009	1:30	24.27	472	6.07
8/16/2009	1:45	24.26	471	6.04
8/16/2009	2:00	24.24	472	6.03
8/16/2009	2:15	24.33	471	5.86
8/16/2009	2:30	24.36	471	5.79
8/16/2009	2:45	24.36	471	5.72
8/16/2009	3:00	24.20	472	5.71
8/16/2009	3:15	24.31	471	5.70
8/16/2009	3:30	24.31	470	5.58
8/16/2009	3:45	24.24	471	5.56
8/16/2009	4:00	24.03	462	5.53
8/16/2009	4:15	23.86	466	5.46
8/16/2009	4:30	24.07	465	5.47
8/16/2009	4:45	24.06	465	5.50
8/16/2009	5:00	24.06	465	5.51
8/16/2009	5:15	23.95	461	5.43
8/16/2009	5:30	24.03	463	5.53
8/16/2009	5:45	23.88	465	5.38
8/16/2009	6:00	23.85	466	5.37
8/16/2009	6:15	23.76	466	5.24
8/16/2009	6:30	23.73	465	5.12
8/16/2009	6:45	23.68	465	5.08
8/16/2009	7:00	23.64	465	4.99



Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/16/2009	7:15	23.58	467	4.90
8/16/2009	7:30	23.52	466	4.84
8/16/2009	7:45	23.53	465	4.67
8/16/2009	8:00	23.53	465	4.57
8/16/2009	8:15	23.45	465	4.53
8/16/2009	8:30	23.53	465	4.45
8/16/2009	8:45	23.53	464	4.37
8/16/2009	9:00	23.57	464	4.41
8/16/2009	9:15	23.41	462	4.92
8/16/2009	9:30	23.37	456	4.28
8/16/2009	9:45	23.47	452	4.47
8/16/2009	10:00	23.50	444	5.08
8/16/2009	10:15	23.47	446	5.33
8/16/2009	10:30	23.33	451	4.89
8/16/2009	10:45	23.16	452	4.13
8/16/2009	11:00	23.08	455	3.79
8/16/2009	11:15	23.12	449	3.90
8/16/2009	11:30	23.17	436	3.83
8/16/2009	11:45	23.14	433	4.01
8/16/2009	12:00	23.17	434	3.93
8/16/2009	12:15	23.21	429	4.20
8/16/2009	12:30	23.28	423	4.54
8/16/2009	12:45	23.35	420	4.83
8/16/2009	13:00	23.30	424	4.77
8/16/2009	13:15	23.31	423	4.68
8/16/2009	13:30	23.32	423	4.70
8/16/2009	13:45	23.35	423	4.74
8/16/2009	14:00	23.39	423	4.77
8/16/2009	14:15	23.39	424	4.76
8/16/2009	14:30	23.40	424	4.68
8/16/2009	14:45	23.39	423	4.73

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/16/2009	15:00	23.41	423	4.81
8/16/2009	15:15	23.40	424	4.85
8/16/2009	15:30	23.40	423	4.84
8/16/2009	15:45	23.42	423	4.84
8/16/2009	16:00	23.50	422	4.78
8/16/2009	16:15	23.55	421	4.85
8/16/2009	16:30	23.52	422	4.82
8/16/2009	16:45	23.55	420	4.88
8/16/2009	17:00	23.61	420	4.88
8/16/2009	17:15	23.65	422	4.92
8/16/2009	17:30	23.68	422	5.12
8/16/2009	17:45	23.68	422	4.90
8/16/2009	18:00	23.77	423	5.03
8/16/2009	18:15	23.83	425	5.15
8/16/2009	18:30	23.84	425	5.19
8/16/2009	18:45	23.85	425	5.21
8/16/2009	19:00	23.85	426	5.19
8/16/2009	19:15	23.90	428	5.22
8/16/2009	19:30	23.90	427	5.18
8/16/2009	19:45	23.89	428	5.21
8/16/2009	20:00	23.90	427	5.10
8/16/2009	20:15	23.93	428	5.30
8/16/2009	20:30	23.93	430	5.44
8/16/2009	20:45	23.92	429	5.42
8/16/2009	21:00	23.88	429	5.40
8/16/2009	21:15	23.87	430	5.24
8/16/2009	21:30	23.88	431	5.24
8/16/2009	21:45	23.88	432	5.33
8/16/2009	22:00	23.86	432	5.34
8/16/2009	22:15	23.83	433	5.31
8/16/2009	22:30	23.82	434	5.25

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/16/2009	22:45	23.80	434	5.17
8/16/2009	23:00	23.78	434	5.17
8/16/2009	23:15	23.77	434	5.14
8/16/2009	23:30	23.75	434	5.11
8/16/2009	23:45	23.72	434	4.92
8/17/2009	0:00	23.64	428	5.18
8/17/2009	0:15	23.60	429	5.15
8/17/2009	0:30	23.54	428	4.85
8/17/2009	0:45	23.53	430	4.81
8/17/2009	1:00	23.50	431	4.83
8/17/2009	1:15	23.44	427	4.89
8/17/2009	1:30	23.32	414	5.34
8/17/2009	1:45	23.22	410	5.40
8/17/2009	2:00	22.39	421	4.32
8/17/2009	2:15	22.43	430	2.50
8/17/2009	2:30	22.83	372	3.87
8/17/2009	2:45	22.87	375	5.03
8/17/2009	3:00	22.85	373	5.12
8/17/2009	3:15	22.86	373	5.43
8/17/2009	3:30	22.81	374	5.43
8/17/2009	3:45	22.76	373	5.50
8/17/2009	4:00	22.66	372	5.61
8/17/2009	4:15	22.52	359	5.60
8/17/2009	4:30	22.50	356	5.77
8/17/2009	4:45	22.52	361	5.98
8/17/2009	5:00	22.53	367	5.88
8/17/2009	5:15	22.49	353	5.70
8/17/2009	5:30	22.39	337	5.59
8/17/2009	5:45	22.25	314	5.70
8/17/2009	6:00	22.13	313	5.51
8/17/2009	6:15	22.01	344	5.12

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/17/2009	6:30	21.84	338	4.83
8/17/2009	6:45	21.74	324	4.90
8/17/2009	7:00	21.73	337	5.09
8/17/2009	7:15	21.72	354	5.14
8/17/2009	7:30	21.67	354	5.26
8/17/2009	7:45	21.61	330	5.43
8/17/2009	8:00	21.56	318	5.46
8/17/2009	8:15	21.51	337	5.52
8/17/2009	8:30	21.48	361	5.39
8/17/2009	8:45	21.52	365	5.28
8/17/2009	9:00	21.67	345	5.11
8/17/2009	9:15	21.73	284	5.04
8/17/2009	9:30	21.74	234	5.06
8/17/2009	9:45	21.75	206	5.11
8/17/2009	10:00	21.68	180	5.21
8/17/2009	10:15	21.59	167	5.32
8/17/2009	10:30	21.57	169	5.33
8/17/2009	10:45	21.58	174	5.28
8/17/2009	11:00	21.59	173	5.25
8/17/2009	11:15	21.58	167	5.25
8/17/2009	11:30	21.56	161	5.29
8/17/2009	11:45	21.56	155	5.34
8/17/2009	12:00	21.56	148	5.43
8/17/2009	12:15	21.57	142	5.51
8/17/2009	12:30	21.56	138	5.59
8/17/2009	12:45	21.57	136	5.69
8/17/2009	13:00	21.58	134	5.75
8/17/2009	13:15	21.60	134	5.80
8/17/2009	13:30	21.62	134	5.84
8/17/2009	13:45	21.63	135	5.87
8/17/2009	14:00	21.65	136	5.87

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/17/2009	14:15	21.66	136	5.87
8/17/2009	14:30	21.67	136	5.90
8/17/2009	14:45	21.68	137	5.91
8/17/2009	15:00	21.69	137	5.94
8/17/2009	15:15	21.70	140	5.97
8/17/2009	15:30	21.73	143	5.96
8/17/2009	15:45	21.75	146	5.98
8/17/2009	16:00	21.78	148	5.99
8/17/2009	16:15	21.81	152	5.99
8/17/2009	16:30	21.84	154	6.00
8/17/2009	16:45	21.88	156	6.02
8/17/2009	17:00	21.90	157	6.04
8/17/2009	17:15	21.93	160	6.04
8/17/2009	17:30	21.96	164	6.05
8/17/2009	17:45	21.98	167	6.11
8/17/2009	18:00	22.00	170	6.13
8/17/2009	18:15	22.01	173	6.15
8/17/2009	18:30	22.03	175	6.16
8/17/2009	18:45	22.05	175	6.17
8/17/2009	19:00	22.09	174	6.19
8/17/2009	19:15	22.12	173	6.18
8/17/2009	19:30	22.15	172	6.19
8/17/2009	19:45	22.17	171	6.19
8/17/2009	20:00	22.19	172	6.19
8/17/2009	20:15	22.22	174	6.16
8/17/2009	20:30	22.25	176	6.15
8/17/2009	20:45	22.27	176	6.13
8/17/2009	21:00	22.28	174	6.10
8/17/2009	21:15	22.28	169	6.10
8/17/2009	21:30	22.28	162	6.10
8/17/2009	21:45	22.26	155	6.13

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/17/2009	22:00	22.23	150	6.15
8/17/2009	22:15	22.21	147	6.17
8/17/2009	22:30	22.20	145	6.17
8/17/2009	22:45	22.19	145	6.19
8/17/2009	23:00	22.18	146	6.20
8/17/2009	23:15	22.18	149	6.21
8/17/2009	23:30	22.18	151	6.21
8/17/2009	23:45	22.17	152	6.19
8/18/2009	0:00	22.16	152	6.20
8/18/2009	0:15	22.14	151	6.21
8/18/2009	0:30	22.13	150	6.25
8/18/2009	0:45	22.12	149	6.26
8/18/2009	1:00	22.11	148	6.29
8/18/2009	1:15	22.11	148	6.32
8/18/2009	1:30	22.12	148	6.33
8/18/2009	1:45	22.13	149	6.31
8/18/2009	2:00	22.14	149	6.32
8/18/2009	2:15	22.15	150	6.33
8/18/2009	2:30	22.17	151	6.34
8/18/2009	2:45	22.19	151	6.34
8/18/2009	3:00	22.20	152	6.33
8/18/2009	3:15	22.22	153	6.35
8/18/2009	3:30	22.23	153	6.35
8/18/2009	3:45	22.24	154	6.36
8/18/2009	4:00	22.24	154	6.37
8/18/2009	4:15	22.25	155	6.37
8/18/2009	4:30	22.25	156	6.37
8/18/2009	4:45	22.25	156	6.38
8/18/2009	5:00	22.25	157	6.37
8/18/2009	5:15	22.25	157	6.37
8/18/2009	5:30	22.24	158	6.37

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/18/2009	5:45	22.23	158	6.38
8/18/2009	6:00	22.22	158	6.39
8/18/2009	6:15	22.21	158	6.39
8/18/2009	6:30	22.19	157	6.40
8/18/2009	6:45	22.17	158	6.41
8/18/2009	7:00	22.16	158	6.43
8/18/2009	7:15	22.14	159	6.43
8/18/2009	7:30	22.13	159	6.44
8/18/2009	7:45	22.11	160	6.45
8/18/2009	8:00	22.09	161	6.45
8/18/2009	8:15	22.08	161	6.47
8/18/2009	8:30	22.07	161	6.48
8/18/2009	8:45	22.06	161	6.49
8/18/2009	9:00	22.06	160	6.53
8/18/2009	9:15	22.05	160	6.53
8/18/2009	9:30	22.05	159	6.55
8/18/2009	9:45	22.05	159	6.56
8/18/2009	10:00	22.05	158	6.59
8/18/2009	10:15	22.05	158	6.59
8/18/2009	10:30	22.06	158	6.59
8/18/2009	10:45	22.05	158	6.60
8/18/2009	11:00	22.05	158	6.60
8/18/2009	11:15	22.05	158	6.62
8/18/2009	11:30	22.08	158	6.63
8/18/2009	11:45	22.10	158	6.63
8/18/2009	12:00	22.13	158	6.62
8/18/2009	12:15	22.18	158	6.64
8/18/2009	12:30	22.20	159	6.63
8/18/2009	12:45	22.23	159	6.63
8/18/2009	13:00	22.26	159	6.64
8/18/2009	13:15	22.28	160	6.63

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/18/2009	13:30	22.32	160	6.63
8/18/2009	13:45	22.34	160	6.66
8/18/2009	14:00	22.37	160	6.66
8/18/2009	14:15	22.39	159	6.67
8/18/2009	14:30	22.40	159	6.67
8/18/2009	14:45	22.41	159	6.69
8/18/2009	15:00	22.43	159	6.69
8/18/2009	15:15	22.44	159	6.71
8/18/2009	15:30	22.45	158	6.72
8/18/2009	15:45	22.48	159	6.72
8/18/2009	16:00	22.49	159	6.72
8/18/2009	16:15	22.51	159	6.74
8/18/2009	16:30	22.52	159	6.75
8/18/2009	16:45	22.54	159	6.75
8/18/2009	17:00	22.56	159	6.76
8/18/2009	17:15	22.58	159	6.76
8/18/2009	17:30	22.59	159	6.76
8/18/2009	17:45	22.60	159	6.78
8/18/2009	18:00	22.61	160	6.79
8/18/2009	18:15	22.61	160	6.77
8/18/2009	18:30	22.63	160	6.78
8/18/2009	18:45	22.64	160	6.78
8/18/2009	19:00	22.65	160	6.77
8/18/2009	19:15	22.66	160	6.77
8/18/2009	19:30	22.68	161	6.77
8/18/2009	19:45	22.69	161	6.78
8/18/2009	20:00	22.70	161	6.76
8/18/2009	20:15	22.71	161	6.76
8/18/2009	20:30	22.71	162	6.76
8/18/2009	20:45	22.71	162	6.76
8/18/2009	21:00	22.71	162	6.76

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/18/2009	21:15	22.72	163	6.75
8/18/2009	21:30	22.72	163	6.75
8/18/2009	21:45	22.73	164	6.73
8/18/2009	22:00	22.73	164	6.73
8/18/2009	22:15	22.73	164	6.74
8/18/2009	22:30	22.73	165	6.73
8/18/2009	22:45	22.72	165	6.72
8/18/2009	23:00	22.71	165	6.73
8/18/2009	23:15	22.70	166	6.72
8/18/2009	23:30	22.70	166	6.71
8/18/2009	23:45	22.70	166	6.70
8/19/2009	0:00	22.69	167	6.71
8/19/2009	0:15	22.69	167	6.71
8/19/2009	0:30	22.69	167	6.69
8/19/2009	0:45	22.69	168	6.69
8/19/2009	1:00	22.68	168	6.69
8/19/2009	1:15	22.68	168	6.68
8/19/2009	1:30	22.67	169	6.68
8/19/2009	1:45	22.66	169	6.68
8/19/2009	2:00	22.66	169	6.69
8/19/2009	2:15	22.65	169	6.69
8/19/2009	2:30	22.64	170	6.67
8/19/2009	2:45	22.63	170	6.68
8/19/2009	3:00	22.62	170	6.67
8/19/2009	3:15	22.61	170	6.66
8/19/2009	3:30	22.61	171	6.66
8/19/2009	3:45	22.60	171	6.65
8/19/2009	4:00	22.58	171	6.65
8/19/2009	4:15	22.57	171	6.64
8/19/2009	4:30	22.55	172	6.64
8/19/2009	4:45	22.54	172	6.64

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/19/2009	5:00	22.52	172	6.63
8/19/2009	5:15	22.50	172	6.64
8/19/2009	5:30	22.49	173	6.64
8/19/2009	5:45	22.47	173	6.64
8/19/2009	6:00	22.46	173	6.64
8/19/2009	6:15	22.44	173	6.64
8/19/2009	6:30	22.42	173	6.64
8/19/2009	6:45	22.41	173	6.65
8/19/2009	7:00	22.39	174	6.65
8/19/2009	7:15	22.38	174	6.66
8/19/2009	7:30	22.37	174	6.67
8/19/2009	7:45	22.36	174	6.67
8/19/2009	8:00	22.35	174	6.68
8/19/2009	8:15	22.35	174	6.68
8/19/2009	8:30	22.34	175	6.70
8/19/2009	8:45	22.35	175	6.72
8/19/2009	9:00	22.35	175	6.73
8/19/2009	9:15	22.35	175	6.72
8/19/2009	9:30	22.35	175	6.74
8/19/2009	9:45	22.37	175	6.76
8/19/2009	10:00	22.38	175	6.77
8/19/2009	10:15	22.40	175	6.79
8/19/2009	10:30	22.40	175	6.78
8/19/2009	10:45	22.42	176	6.79
8/19/2009	11:00	22.43	175	6.81
8/19/2009	11:15	22.44	176	6.82
8/19/2009	11:30	22.46	176	6.83
8/19/2009	11:45	22.46	176	6.82
8/19/2009	12:00	22.46	176	6.82
8/19/2009	12:15	22.45	176	6.82
8/19/2009	12:30	22.42	173	6.91

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/19/2009	12:45	22.42	172	6.92
8/19/2009	13:00	22.44	173	6.93
8/19/2009	13:15	22.49	174	6.92
8/19/2009	13:30	22.60	175	6.92
8/19/2009	13:45	22.69	176	6.91
8/19/2009	14:00	22.83	176	6.88
8/19/2009	14:15	22.89	178	6.85
8/19/2009	14:30	22.97	179	6.80
8/19/2009	14:45	23.01	176	6.78
8/19/2009	15:00	23.02	173	6.78
8/19/2009	15:15	23.04	170	6.78
8/19/2009	15:30	23.08	170	6.78
8/19/2009	15:45	23.06	173	6.77
8/19/2009	16:00	23.03	181	6.69
8/19/2009	16:15	23.07	186	6.57
8/19/2009	16:30	23.18	190	6.41
8/19/2009	16:45	23.20	190	6.23
8/19/2009	17:00	23.31	191	6.15
8/19/2009	17:15	23.41	194	6.11
8/19/2009	17:30	23.46	196	6.00
8/19/2009	17:45	23.53	197	5.94
8/19/2009	18:00	23.61	200	5.95
8/19/2009	18:15	23.61	202	6.05
8/19/2009	18:30	23.65	203	6.15
8/19/2009	18:45	23.66	204	6.24
8/19/2009	19:00	23.69	207	6.25
8/19/2009	19:15	23.71	217	6.09
8/19/2009	19:30	23.73	211	6.07
8/19/2009	19:45	23.74	196	6.19
8/19/2009	20:00	23.62	187	6.28
8/19/2009	20:15	23.41	177	6.34

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/19/2009	20:30	23.23	171	6.39
8/19/2009	20:45	23.06	160	6.27
8/19/2009	21:00	22.87	149	6.09
8/19/2009	21:15	22.66	147	6.05
8/19/2009	21:30	22.42	139	6.02
8/19/2009	21:45	22.19	125	5.94
8/19/2009	22:00	22.01	112	5.88
8/19/2009	22:15	21.87	102	5.86
8/19/2009	22:30	21.80	96	5.85
8/19/2009	22:45	21.78	93	5.86
8/19/2009	23:00	21.77	89	5.90
8/19/2009	23:15	21.79	86	5.95
8/19/2009	23:30	21.83	84	5.98
8/19/2009	23:45	21.88	84	5.99
8/20/2009	0:00	21.94	87	5.98
8/20/2009	0:15	21.99	89	5.92
8/20/2009	0:30	22.04	91	5.89
8/20/2009	0:45	22.08	92	5.87
8/20/2009	1:00	22.13	92	5.86
8/20/2009	1:15	22.18	93	5.85
8/20/2009	1:30	22.22	94	5.83
8/20/2009	1:45	22.26	95	5.84
8/20/2009	2:00	22.31	95	5.84
8/20/2009	2:15	22.35	96	5.83
8/20/2009	2:30	22.39	98	5.83
8/20/2009	2:45	22.44	98	5.83
8/20/2009	3:00	22.49	100	5.87
8/20/2009	3:15	22.52	100	5.87
8/20/2009	3:30	22.54	102	5.89
8/20/2009	3:45	22.56	103	5.90
8/20/2009	4:00	22.57	106	5.90

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/20/2009	4:15	22.58	109	5.87
8/20/2009	4:30	22.57	112	5.84
8/20/2009	4:45	22.56	118	5.81
8/20/2009	5:00	22.55	125	5.77
8/20/2009	5:15	22.51	129	5.78
8/20/2009	5:30	22.45	130	5.79
8/20/2009	5:45	22.41	127	5.79
8/20/2009	6:00	22.38	126	5.80
8/20/2009	6:15	22.36	126	5.81
8/20/2009	6:30	22.34	125	5.83
8/20/2009	6:45	22.31	126	5.85
8/20/2009	7:00	22.26	127	5.87
8/20/2009	7:15	22.22	129	5.89
8/20/2009	7:30	22.18	129	5.89
8/20/2009	7:45	22.16	129	5.91
8/20/2009	8:00	22.13	131	5.90
8/20/2009	8:15	22.12	130	5.89
8/20/2009	8:30	22.11	130	5.89
8/20/2009	8:45	22.10	130	5.90
8/20/2009	9:00	22.10	128	5.90
8/20/2009	9:15	22.10	127	5.93
8/20/2009	9:30	22.11	127	5.95
8/20/2009	9:45	22.12	127	6.00
8/20/2009	10:00	22.14	127	6.03
8/20/2009	10:15	22.16	127	6.06
8/20/2009	10:30	22.19	127	6.07
8/20/2009	10:45	22.21	127	6.11
8/20/2009	11:00	22.23	128	6.14
8/20/2009	11:15	22.25	129	6.17
8/20/2009	11:30	22.28	130	6.19
8/20/2009	11:45	22.30	131	6.19

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/20/2009	12:00	22.31	132	6.22
8/20/2009	12:15	22.33	133	6.22
8/20/2009	12:30	22.34	134	6.23
8/20/2009	12:45	22.35	135	6.21
8/20/2009	13:00	22.36	136	6.22
8/20/2009	13:15	22.37	137	6.21
8/20/2009	13:30	22.37	138	6.23
8/20/2009	13:45	22.39	138	6.23
8/20/2009	14:00	22.40	139	6.24
8/20/2009	14:15	22.41	139	6.24
8/20/2009	14:30	22.41	139	6.23
8/20/2009	14:45	22.41	139	6.24
8/20/2009	15:00	22.42	139	6.24
8/20/2009	15:15	22.42	139	6.26
8/20/2009	15:30	22.43	139	6.24
8/20/2009	15:45	22.46	140	6.24
8/20/2009	16:00	22.47	140	6.25
8/20/2009	16:15	22.49	140	6.23
8/20/2009	16:30	22.50	140	6.26
8/20/2009	16:45	22.51	141	6.26
8/20/2009	17:00	22.52	141	6.26
8/20/2009	17:15	22.53	141	6.26
8/20/2009	17:30	22.54	141	6.27
8/20/2009	17:45	22.55	141	6.28
8/20/2009	18:00	22.54	141	6.29
8/20/2009	18:15	22.53	141	6.28
8/20/2009	18:30	22.52	141	6.32
8/20/2009	18:45	22.50	141	6.33
8/20/2009	19:00	22.49	141	6.35
8/20/2009	19:15	22.49	142	6.34
8/20/2009	19:30	22.48	142	6.36

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/20/2009	19:45	22.47	143	6.36
8/20/2009	20:00	22.45	143	6.37
8/20/2009	20:15	22.43	143	6.38
8/20/2009	20:30	22.42	144	6.37
8/20/2009	20:45	22.41	144	6.37
8/20/2009	21:00	22.40	144	6.38
8/20/2009	21:15	22.40	144	6.40
8/20/2009	21:30	22.38	144	6.41
8/20/2009	21:45	22.37	144	6.40
8/20/2009	22:00	22.35	144	6.43
8/20/2009	22:15	22.33	143	6.43
8/20/2009	22:30	22.31	144	6.44
8/20/2009	22:45	22.28	144	6.45
8/20/2009	23:00	22.26	144	6.48
8/20/2009	23:15	22.24	144	6.48
8/20/2009	23:30	22.21	145	6.51
8/20/2009	23:45	22.19	145	6.53
8/21/2009	0:00	22.17	146	6.53
8/21/2009	0:15	22.15	146	6.54
8/21/2009	0:30	22.13	146	6.55
8/21/2009	0:45	22.11	147	6.57
8/21/2009	1:00	22.09	147	6.58
8/21/2009	1:15	22.07	147	6.58
8/21/2009	1:30	22.05	148	6.61
8/21/2009	1:45	22.04	148	6.61
8/21/2009	2:00	22.03	148	6.63
8/21/2009	2:15	22.02	148	6.64
8/21/2009	2:30	22.00	149	6.65
8/21/2009	2:45	21.98	149	6.68
8/21/2009	3:00	21.96	149	6.69
8/21/2009	3:15	21.94	150	6.70

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/21/2009	3:30	21.92	150	6.69
8/21/2009	3:45	21.90	149	6.69
8/21/2009	4:00	21.89	149	6.69
8/21/2009	4:15	21.86	149	6.70
8/21/2009	4:30	21.85	149	6.72
8/21/2009	4:45	21.82	149	6.70
8/21/2009	5:00	21.80	149	6.71
8/21/2009	5:15	21.78	149	6.72
8/21/2009	5:30	21.75	149	6.73
8/21/2009	5:45	21.71	148	6.74
8/21/2009	6:00	21.68	148	6.76
8/21/2009	6:15	21.64	148	6.74
8/21/2009	6:30	21.61	148	6.75
8/21/2009	6:45	21.58	147	6.77
8/21/2009	7:00	21.55	147	6.77
8/21/2009	7:15	21.51	147	6.79
8/21/2009	7:30	21.48	147	6.81
8/21/2009	7:45	21.45	147	6.81
8/21/2009	8:00	21.43	147	6.82
8/21/2009	8:15	21.40	147	6.82
8/21/2009	8:30	21.38	148	6.84
8/21/2009	8:45	21.37	148	6.83
8/21/2009	9:00	21.35	148	6.85
8/21/2009	9:15	21.35	148	6.85
8/21/2009	9:30	21.34	149	6.86
8/21/2009	9:45	21.33	149	6.89
8/21/2009	10:00	21.33	149	6.89
8/21/2009	10:15	21.33	149	6.90
8/21/2009	10:30	21.34	149	6.92
8/21/2009	10:45	21.34	149	6.92
8/21/2009	11:00	21.34	149	6.93



Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/21/2009	11:15	21.33	150	6.96
8/21/2009	11:30	21.32	150	6.94
8/21/2009	11:45	21.33	150	6.96
8/21/2009	12:00	21.33	150	6.98
8/21/2009	12:15	21.33	150	6.99
8/21/2009	12:30	21.33	151	6.97
8/21/2009	12:45	21.35	151	7.01
8/21/2009	13:00	21.37	151	7.02
8/21/2009	13:15	21.39	151	7.04
8/21/2009	13:30	21.41	152	7.04
8/21/2009	13:45	21.44	152	7.05
8/21/2009	14:00	21.47	153	7.06
8/21/2009	14:15	21.47	154	7.07
8/21/2009	14:30	21.49	155	7.07
8/21/2009	14:45	21.48	155	7.07
8/21/2009	15:00	21.50	155	7.09
8/21/2009	15:15	21.51	155	7.10
8/21/2009	15:30	21.51	155	7.10
8/21/2009	15:45	21.51	155	7.11
8/21/2009	16:00	21.53	155	7.12
8/21/2009	16:15	21.55	155	7.12
8/21/2009	16:30	21.55	155	7.13
8/21/2009	16:45	21.55	155	7.13
8/21/2009	17:00	21.56	155	7.11
8/21/2009	17:15	21.56	156	7.12
8/21/2009	17:30	21.55	156	7.12
8/21/2009	17:45	21.54	156	7.13
8/21/2009	18:00	21.55	157	7.12
8/21/2009	18:15	21.54	157	7.12
8/21/2009	18:30	21.53	157	7.12
8/21/2009	18:45	21.52	157	7.14

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/21/2009	19:00	21.52	158	7.12
8/21/2009	19:15	21.51	158	7.12
8/21/2009	19:30	21.50	158	7.12
8/21/2009	19:45	21.48	158	7.13
8/21/2009	20:00	21.46	158	7.13
8/21/2009	20:15	21.45	159	7.11
8/21/2009	20:30	21.44	159	7.11
8/21/2009	20:45	21.42	159	7.12
8/21/2009	21:00	21.40	160	7.12
8/21/2009	21:15	21.38	160	7.12
8/21/2009	21:30	21.35	160	7.12
8/21/2009	21:45	21.32	160	7.14
8/21/2009	22:00	21.30	161	7.13
8/21/2009	22:15	21.27	161	7.15
8/21/2009	22:30	21.25	161	7.13
8/21/2009	22:45	21.22	161	7.14
8/21/2009	23:00	21.19	162	7.16
8/21/2009	23:15	21.16	162	7.16
8/21/2009	23:30	21.13	162	7.18
8/21/2009	23:45	21.10	163	7.18
8/22/2009	0:00	21.06	163	7.18
8/22/2009	0:15	21.04	163	7.19
8/22/2009	0:30	21.01	163	7.19
8/22/2009	0:45	20.98	164	7.20
8/22/2009	1:00	20.95	164	7.21
8/22/2009	1:15	20.92	164	7.23
8/22/2009	1:30	20.89	164	7.22
8/22/2009	1:45	20.85	164	7.21
8/22/2009	2:00	20.82	164	7.23
8/22/2009	2:15	20.79	165	7.25
8/22/2009	2:30	20.75	165	7.25

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/22/2009	2:45	20.72	165	7.26
8/22/2009	3:00	20.68	165	7.28
8/22/2009	3:15	20.64	166	7.26
8/22/2009	3:30	20.61	166	7.28
8/22/2009	3:45	20.57	166	7.28
8/22/2009	4:00	20.54	166	7.28
8/22/2009	4:15	20.51	166	7.30
8/22/2009	4:30	20.47	167	7.30
8/22/2009	4:45	20.44	167	7.31
8/22/2009	5:00	20.40	167	7.31
8/22/2009	5:15	20.37	167	7.32
8/22/2009	5:30	20.34	167	7.34
8/22/2009	5:45	20.31	167	7.34
8/22/2009	6:00	20.28	168	7.36
8/22/2009	6:15	20.24	168	7.36
8/22/2009	6:30	20.21	168	7.37
8/22/2009	6:45	20.18	168	7.37
8/22/2009	7:00	20.14	168	7.38
8/22/2009	7:15	20.11	168	7.38
8/22/2009	7:30	20.09	169	7.39
8/22/2009	7:45	20.06	169	7.41
8/22/2009	8:00	20.04	169	7.43
8/22/2009	8:15	20.02	169	7.41
8/22/2009	8:30	20.01	169	7.44
8/22/2009	8:45	20.00	169	7.44
8/22/2009	9:00	19.99	169	7.44
8/22/2009	9:15	19.98	170	7.44
8/22/2009	9:30	19.98	170	7.47
8/22/2009	9:45	19.99	170	7.48
8/22/2009	10:00	20.00	170	7.48
8/22/2009	10:15	20.02	170	7.49

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/22/2009	10:30	20.05	170	7.52
8/22/2009	10:45	20.07	170	7.54
8/22/2009	11:00	20.11	171	7.56
8/22/2009	11:15	20.15	171	7.58
8/22/2009	11:30	20.20	171	7.59
8/22/2009	11:45	20.25	171	7.60
8/22/2009	12:00	20.29	171	7.61
8/22/2009	12:15	20.34	171	7.62
8/22/2009	12:30	20.40	171	7.64
8/22/2009	12:45	20.44	171	7.67
8/22/2009	13:00	20.49	172	7.68
8/22/2009	13:15	20.57	172	7.69
8/22/2009	13:30	20.61	172	7.71
8/22/2009	13:45	20.66	172	7.71
8/22/2009	14:00	20.69	172	7.76
8/22/2009	14:15	20.74	172	7.76
8/22/2009	14:30	20.78	172	7.75
8/22/2009	14:45	20.80	172	7.78
8/22/2009	15:00	20.84	172	7.77
8/22/2009	15:15	20.85	172	7.78
8/22/2009	15:30	20.83	172	7.74
8/22/2009	15:45	20.81	173	7.76
8/22/2009	16:00	20.82	173	7.74
8/22/2009	16:15	20.82	173	7.75
8/22/2009	16:30	20.82	173	7.77
8/22/2009	16:45	20.82	173	7.75
8/22/2009	17:00	20.83	173	7.73
8/22/2009	17:15	20.85	173	7.71
8/22/2009	17:30	20.86	173	7.73
8/22/2009	17:45	20.87	173	7.71
8/22/2009	18:00	20.88	174	7.71

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/22/2009	18:15	20.89	174	7.70
8/22/2009	18:30	20.89	174	7.68
8/22/2009	18:45	20.89	174	7.66
8/22/2009	19:00	20.89	174	7.66
8/22/2009	19:15	20.89	174	7.65
8/22/2009	19:30	20.89	174	7.62
8/22/2009	19:45	20.89	174	7.62
8/22/2009	20:00	20.89	174	7.60
8/22/2009	20:15	20.89	174	7.58
8/22/2009	20:30	20.89	174	7.55
8/22/2009	20:45	20.89	175	7.52
8/22/2009	21:00	20.89	175	7.51
8/22/2009	21:15	20.89	175	7.50
8/22/2009	21:30	20.88	175	7.50
8/22/2009	21:45	20.88	175	7.47
8/22/2009	22:00	20.88	175	7.47
8/22/2009	22:15	20.88	175	7.47
8/22/2009	22:30	20.87	176	7.42
8/22/2009	22:45	20.85	176	7.43
8/22/2009	23:00	20.83	176	7.44
8/22/2009	23:15	20.79	176	7.44
8/22/2009	23:30	20.76	176	7.43
8/22/2009	23:45	20.72	176	7.42
8/23/2009	0:00	20.67	176	7.42
8/23/2009	0:15	20.63	176	7.41
8/23/2009	0:30	20.58	176	7.42
8/23/2009	0:45	20.53	177	7.41
8/23/2009	1:00	20.48	177	7.44
8/23/2009	1:15	20.43	177	7.44
8/23/2009	1:30	20.38	177	7.42
8/23/2009	1:45	20.33	177	7.44

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/23/2009	2:00	20.27	177	7.42
8/23/2009	2:15	20.23	177	7.44
8/23/2009	2:30	20.17	177	7.43
8/23/2009	2:45	20.13	177	7.45
8/23/2009	3:00	20.07	178	7.44
8/23/2009	3:15	20.02	178	7.46
8/23/2009	3:30	19.97	178	7.46
8/23/2009	3:45	19.92	178	7.48
8/23/2009	4:00	19.87	178	7.48
8/23/2009	4:15	19.82	178	7.47
8/23/2009	4:30	19.77	178	7.49
8/23/2009	4:45	19.72	178	7.54
8/23/2009	5:00	19.68	178	7.52
8/23/2009	5:15	19.63	179	7.52
8/23/2009	5:30	19.58	179	7.52
8/23/2009	5:45	19.54	179	7.54
8/23/2009	6:00	19.49	179	7.54
8/23/2009	6:15	19.44	179	7.55
8/23/2009	6:30	19.40	179	7.54
8/23/2009	6:45	19.35	179	7.58
8/23/2009	7:00	19.30	179	7.57
8/23/2009	7:15	19.26	179	7.59
8/23/2009	7:30	19.22	179	7.60
8/23/2009	7:45	19.18	180	7.60
8/23/2009	8:00	19.15	180	7.62
8/23/2009	8:15	19.13	180	7.62
8/23/2009	8:30	19.10	180	7.64
8/23/2009	8:45	19.08	180	7.66
8/23/2009	9:00	19.07	180	7.66
8/23/2009	9:15	19.06	180	7.67
8/23/2009	9:30	19.06	180	7.69

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/23/2009	9:45	19.07	180	7.71
8/23/2009	10:00	19.08	180	7.73
8/23/2009	10:15	19.11	180	7.75
8/23/2009	10:30	19.14	180	7.77
8/23/2009	10:45	19.17	180	7.79
8/23/2009	11:00	19.21	180	7.85
8/23/2009	11:15	19.26	181	7.89
8/23/2009	11:30	19.31	181	7.88
8/23/2009	11:45	19.35	181	7.92
8/23/2009	12:00	19.43	181	7.96
8/23/2009	12:15	19.50	181	7.96
8/23/2009	12:30	19.57	181	7.99
8/23/2009	12:45	19.66	181	8.02
8/23/2009	13:00	19.73	181	8.03
8/23/2009	13:15	19.81	181	8.06
8/23/2009	13:30	19.90	181	8.06
8/23/2009	13:45	19.97	182	8.08
8/23/2009	14:00	20.06	182	8.11
8/23/2009	14:15	20.13	182	8.13
8/23/2009	14:30	20.21	182	8.14
8/23/2009	14:45	20.26	182	8.14
8/23/2009	15:00	20.32	182	8.13
8/23/2009	15:15	20.34	182	8.15
8/23/2009	15:30	20.36	182	8.14
8/23/2009	15:45	20.37	182	8.11
8/23/2009	16:00	20.36	182	8.11
8/23/2009	16:15	20.36	182	8.09
8/23/2009	16:30	20.36	182	8.10
8/23/2009	16:45	20.35	182	8.04
8/23/2009	17:00	20.36	182	8.03
8/23/2009	17:15	20.36	182	8.01

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/23/2009	17:30	20.38	182	7.98
8/23/2009	17:45	20.39	182	7.96
8/23/2009	18:00	20.40	183	7.93
8/23/2009	18:15	20.41	183	7.90
8/23/2009	18:30	20.42	183	7.86
8/23/2009	18:45	20.42	183	7.85
8/23/2009	19:00	20.43	183	7.83
8/23/2009	19:15	20.44	183	7.80
8/23/2009	19:30	20.45	183	7.79
8/23/2009	19:45	20.46	183	7.75
8/23/2009	20:00	20.45	184	7.76
8/23/2009	20:15	20.45	184	7.75
8/23/2009	20:30	20.44	184	7.70
8/23/2009	20:45	20.43	184	7.69
8/23/2009	21:00	20.42	184	7.68
8/23/2009	21:15	20.41	184	7.65
8/23/2009	21:30	20.40	184	7.64
8/23/2009	21:45	20.39	184	7.63
8/23/2009	22:00	20.39	184	7.60
8/23/2009	22:15	20.39	184	7.59
8/23/2009	22:30	20.39	184	7.57
8/23/2009	22:45	20.40	184	7.56
8/23/2009	23:00	20.41	185	7.55
8/23/2009	23:15	20.41	184	7.52
8/23/2009	23:30	20.41	184	7.52
8/23/2009	23:45	20.41	184	7.51
8/24/2009	0:00	20.41	185	7.50
8/24/2009	0:15	20.42	185	7.49
8/24/2009	0:30	20.42	185	7.49
8/24/2009	0:45	20.42	185	7.45
8/24/2009	1:00	20.42	185	7.44

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/24/2009	1:15	20.41	185	7.44
8/24/2009	1:30	20.40	185	7.42
8/24/2009	1:45	20.38	185	7.40
8/24/2009	2:00	20.35	185	7.40
8/24/2009	2:15	20.32	185	7.39
8/24/2009	2:30	20.28	186	7.40
8/24/2009	2:45	20.24	186	7.42
8/24/2009	3:00	20.19	186	7.42
8/24/2009	3:15	20.15	186	7.41
8/24/2009	3:30	20.11	186	7.43
8/24/2009	3:45	20.06	186	7.50
8/24/2009	4:00	20.01	186	7.53
8/24/2009	4:15	19.95	186	7.53
8/24/2009	4:30	19.90	186	7.56
8/24/2009	4:45	19.85	186	7.54
8/24/2009	5:00	19.79	186	7.56
8/24/2009	5:15	19.73	186	7.56
8/24/2009	5:30	19.67	186	7.60
8/24/2009	5:45	19.62	186	7.60
8/24/2009	6:00	19.56	187	7.60
8/24/2009	6:15	19.50	187	7.60
8/24/2009	6:30	19.45	187	7.62
8/24/2009	6:45	19.39	187	7.63
8/24/2009	7:00	19.34	187	7.62
8/24/2009	7:15	19.30	187	7.65
8/24/2009	7:30	19.25	187	7.67
8/24/2009	7:45	19.22	187	7.67
8/24/2009	8:00	19.19	187	7.68
8/24/2009	8:15	19.16	187	7.69
8/24/2009	8:30	19.15	187	7.69
8/24/2009	8:45	19.13	187	7.71

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/24/2009	9:00	19.13	187	7.74
8/24/2009	9:15	19.13	187	7.74
8/24/2009	9:30	19.13	188	7.75
8/24/2009	9:45	19.14	188	7.78
8/24/2009	10:00	19.16	188	7.79
8/24/2009	10:15	19.19	188	7.82
8/24/2009	10:30	19.22	188	7.82
8/24/2009	10:45	19.26	188	7.86
8/24/2009	11:00	19.30	188	7.89
8/24/2009	11:15	19.35	188	7.91
8/24/2009	11:30	19.40	188	7.93
8/24/2009	11:45	19.46	188	7.97
8/24/2009	12:00	19.53	188	8.02
8/24/2009	12:15	19.61	188	8.04
8/24/2009	12:30	19.69	188	8.06
8/24/2009	12:45	19.77	188	8.08
8/24/2009	13:00	19.87	189	8.11
8/24/2009	13:15	19.95	189	8.13
8/24/2009	13:30	20.04	189	8.17
8/24/2009	13:45	20.11	189	8.19
8/24/2009	14:00	20.20	189	8.23
8/24/2009	14:15	20.29	189	8.23
8/24/2009	14:30	20.35	189	8.22
8/24/2009	14:45	20.43	189	8.23
8/24/2009	15:00	20.47	189	8.23
8/24/2009	15:15	20.52	189	8.22
8/24/2009	15:30	20.55	190	8.21
8/24/2009	15:45	20.56	190	8.19
8/24/2009	16:00	20.56	190	8.19
8/24/2009	16:15	20.55	190	8.15
8/24/2009	16:30	20.55	190	8.13

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/24/2009	16:45	20.54	190	8.11
8/24/2009	17:00	20.54	190	8.08
8/24/2009	17:15	20.53	190	8.06
8/24/2009	17:30	20.52	190	8.04
8/24/2009	17:45	20.52	190	8.00
8/24/2009	18:00	20.51	190	7.98
8/24/2009	18:15	20.51	190	7.95
8/24/2009	18:30	20.50	190	7.90
8/24/2009	18:45	20.50	190	7.89
8/24/2009	19:00	20.50	190	7.87
8/24/2009	19:15	20.50	190	7.82
8/24/2009	19:30	20.51	190	7.80
8/24/2009	19:45	20.51	190	7.77
8/24/2009	20:00	20.51	190	7.75
8/24/2009	20:15	20.51	191	7.71
8/24/2009	20:30	20.51	191	7.68
8/24/2009	20:45	20.50	191	7.65
8/24/2009	21:00	20.50	191	7.66
8/24/2009	21:15	20.49	191	7.62
8/24/2009	21:30	20.48	191	7.61
8/24/2009	21:45	20.47	191	7.60
8/24/2009	22:00	20.46	191	7.57
8/24/2009	22:15	20.45	191	7.55
8/24/2009	22:30	20.44	191	7.54
8/24/2009	22:45	20.44	191	7.52
8/24/2009	23:00	20.43	191	7.51
8/24/2009	23:15	20.43	191	7.49
8/24/2009	23:30	20.43	191	7.48
8/24/2009	23:45	20.43	191	7.51
8/25/2009	0:00	20.42	191	7.49
8/25/2009	0:15	20.42	191	7.50

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/25/2009	0:30	20.41	191	7.48
8/25/2009	0:45	20.41	191	7.45
8/25/2009	1:00	20.41	192	7.44
8/25/2009	1:15	20.40	192	7.43
8/25/2009	1:30	20.40	192	7.41
8/25/2009	1:45	20.39	192	7.37
8/25/2009	2:00	20.39	192	7.36
8/25/2009	2:15	20.38	192	7.36
8/25/2009	2:30	20.38	192	7.35
8/25/2009	2:45	20.38	192	7.32
8/25/2009	3:00	20.38	192	7.31
8/25/2009	3:15	20.38	192	7.29
8/25/2009	3:30	20.39	192	7.28
8/25/2009	3:45	20.39	192	7.25
8/25/2009	4:00	20.39	192	7.24
8/25/2009	4:15	20.39	192	7.24
8/25/2009	4:30	20.40	192	7.23
8/25/2009	4:45	20.40	192	7.20
8/25/2009	5:00	20.40	193	7.19
8/25/2009	5:15	20.39	193	7.18
8/25/2009	5:30	20.38	193	7.15
8/25/2009	5:45	20.37	193	7.14
8/25/2009	6:00	20.36	193	7.13
8/25/2009	6:15	20.34	193	7.14
8/25/2009	6:30	20.32	192	7.15
8/25/2009	6:45	20.29	192	7.15
8/25/2009	7:00	20.27	193	7.15
8/25/2009	7:15	20.25	193	7.15
8/25/2009	7:30	20.23	194	7.15
8/25/2009	7:45	20.21	193	7.20
8/25/2009	8:00	20.19	193	7.18

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/25/2009	8:15	20.17	193	7.18
8/25/2009	8:30	20.15	193	7.20
8/25/2009	8:45	20.14	193	7.22
8/25/2009	9:00	20.12	194	7.22
8/25/2009	9:15	20.10	193	7.23
8/25/2009	9:30	20.09	194	7.24
8/25/2009	9:45	20.10	193	7.25
8/25/2009	10:00	20.11	194	7.28
8/25/2009	10:15	20.12	194	7.30
8/25/2009	10:30	20.15	194	7.33
8/25/2009	10:45	20.19	195	7.36
8/25/2009	11:00	20.25	195	7.39
8/25/2009	11:15	20.31	195	7.42
8/25/2009	11:30	20.37	195	7.46
8/25/2009	11:45	20.44	195	7.47
8/25/2009	12:00	20.51	196	7.52
8/25/2009	12:15	20.58	196	7.56
8/25/2009	12:30	20.67	196	7.60
8/25/2009	12:45	20.77	196	7.60
8/25/2009	13:00	20.86	197	7.61
8/25/2009	13:15	20.96	197	7.65
8/25/2009	13:30	21.07	197	7.66
8/25/2009	13:45	21.16	198	7.67
8/25/2009	14:00	21.26	198	7.67
8/25/2009	14:15	21.34	198	7.70
8/25/2009	14:30	21.42	198	7.71
8/25/2009	14:45	21.48	198	7.71
8/25/2009	15:00	21.53	198	7.71
8/25/2009	15:15	21.58	198	7.73
8/25/2009	15:30	21.62	198	7.72
8/25/2009	15:45	21.64	199	7.70

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/25/2009	16:00	21.65	199	7.71
8/25/2009	16:15	21.65	199	7.68
8/25/2009	16:30	21.65	199	7.67
8/25/2009	16:45	21.65	199	7.63
8/25/2009	17:00	21.64	199	7.64
8/25/2009	17:15	21.62	199	7.61
8/25/2009	17:30	21.62	199	7.58
8/25/2009	17:45	21.61	199	7.58
8/25/2009	18:00	21.59	199	7.56
8/25/2009	18:15	21.58	199	7.53
8/25/2009	18:30	21.56	199	7.52
8/25/2009	18:45	21.55	199	7.47
8/25/2009	19:00	21.53	199	7.44
8/25/2009	19:15	21.51	199	7.41
8/25/2009	19:30	21.49	199	7.39
8/25/2009	19:45	21.48	199	7.34
8/25/2009	20:00	21.47	199	7.34
8/25/2009	20:15	21.46	200	7.30
8/25/2009	20:30	21.45	200	7.25
8/25/2009	20:45	21.44	200	7.25
8/25/2009	21:00	21.43	200	7.19
8/25/2009	21:15	21.42	200	7.20
8/25/2009	21:30	21.41	200	7.15
8/25/2009	21:45	21.40	200	7.12
8/25/2009	22:00	21.38	200	7.10
8/25/2009	22:15	21.37	200	7.09
8/25/2009	22:30	21.36	200	7.08
8/25/2009	22:45	21.35	200	7.04
8/25/2009	23:00	21.34	200	7.00
8/25/2009	23:15	21.33	200	6.98
8/25/2009	23:30	21.32	200	6.97

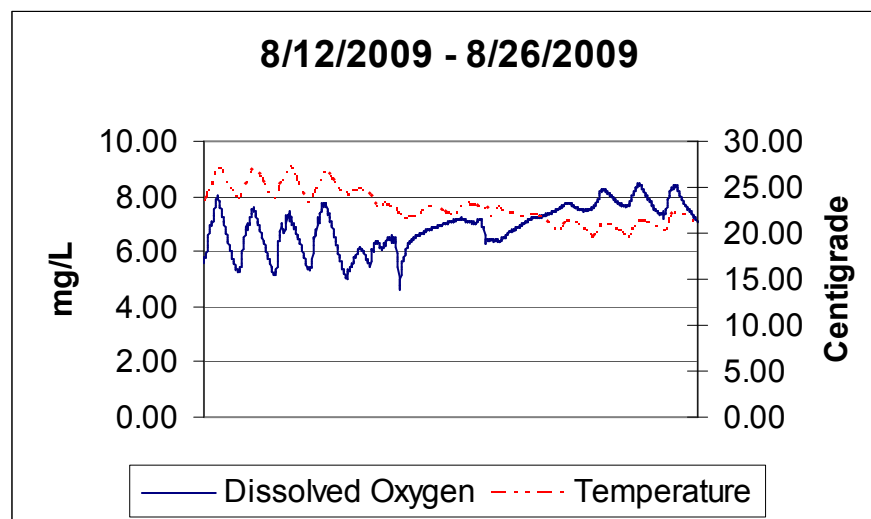
Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/25/2009	23:45	21.30	201	6.97
8/26/2009	0:00	21.28	201	6.96
8/26/2009	0:15	21.27	201	6.95
8/26/2009	0:30	21.24	201	7.06
8/26/2009	0:45	21.22	201	7.07
8/26/2009	1:00	21.19	201	7.10
8/26/2009	1:15	21.17	201	7.08
8/26/2009	1:30	21.14	201	7.04
8/26/2009	1:45	21.12	201	7.07
8/26/2009	2:00	21.09	201	7.07
8/26/2009	2:15	21.07	201	7.03
8/26/2009	2:30	21.05	201	7.03
8/26/2009	2:45	21.03	201	7.02
8/26/2009	3:00	21.02	201	7.06
8/26/2009	3:15	21.01	201	7.07
8/26/2009	3:30	21.00	202	7.10
8/26/2009	3:45	20.99	202	7.06
8/26/2009	4:00	20.99	202	7.06
8/26/2009	4:15	20.98	202	7.06
8/26/2009	4:30	20.97	202	7.03
8/26/2009	4:45	20.97	202	7.02
8/26/2009	5:00	20.96	202	7.01
8/26/2009	5:15	20.95	202	7.01
8/26/2009	5:30	20.94	203	7.01
8/26/2009	5:45	20.93	203	6.99
8/26/2009	6:00	20.92	203	6.99
8/26/2009	6:15	20.90	203	6.98
8/26/2009	6:30	20.89	203	6.99
8/26/2009	6:45	20.88	203	6.99
8/26/2009	7:00	20.87	203	6.99
8/26/2009	7:15	20.86	204	6.99

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/26/2009	7:30	20.85	204	6.99
8/26/2009	7:45	20.86	204	6.97
8/26/2009	8:00	20.86	204	6.98
8/26/2009	8:15	20.87	204	6.99
8/26/2009	8:30	20.87	204	6.98



<b>Stream</b>	<b>Troublesome Creek</b>	<b>Station</b>	<b>#1</b>	<b>County</b>	<b>MARION</b>
<b>Survey Start Date</b>	08/12/09	<b>UTM Easting</b>	612938		
<b>Survey End Date</b>	08/26/09	<b>UTM Northing</b>	4418577		

Summary of days with minimum of 22 hours of measurements:					
Average DO (mg/L):	6.91	Average Maximum DO (mg/L)	7.53	Average Minimum DO (mg/L):	6.21
% Below 5.0	0.4%	Total count of measurements:	1248		
Entire Survey:		Total count of measurements:	1338		
% Below 5.0	0.4%				



Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/12/2009	9:00	23.42	435	5.56
8/12/2009	9:15	23.44	435	5.75
8/12/2009	9:30	23.49	435	5.79
8/12/2009	9:45	23.53	435	5.79
8/12/2009	10:00	23.58	435	5.79
8/12/2009	10:15	23.64	435	5.85
8/12/2009	10:30	23.72	435	5.91
8/12/2009	10:45	23.80	435	5.97
8/12/2009	11:00	23.93	435	6.04
8/12/2009	11:15	24.03	435	6.17
8/12/2009	11:30	24.16	435	6.26
8/12/2009	11:45	24.32	435	6.41
8/12/2009	12:00	24.45	435	6.51
8/12/2009	12:15	24.55	435	6.57
8/12/2009	12:30	24.62	435	6.66
8/12/2009	12:45	24.69	435	6.72
8/12/2009	13:00	24.77	435	6.83
8/12/2009	13:15	24.84	435	6.90
8/12/2009	13:30	24.86	435	6.95
8/12/2009	13:45	24.92	435	6.99
8/12/2009	14:00	24.92	435	6.96
8/12/2009	14:15	25.01	435	7.10
8/12/2009	14:30	25.00	435	7.01
8/12/2009	14:45	25.14	435	7.02
8/12/2009	15:00	25.22	435	7.07
8/12/2009	15:15	25.31	435	7.18
8/12/2009	15:30	25.53	435	7.31
8/12/2009	15:45	25.71	434	7.33
8/12/2009	16:00	25.71	435	7.41
8/12/2009	16:15	26.05	434	7.57
8/12/2009	16:30	26.12	434	7.64

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/12/2009	16:45	26.42	433	7.68
8/12/2009	17:00	26.43	434	7.77
8/12/2009	17:15	26.61	434	7.85
8/12/2009	17:30	26.69	434	7.87
8/12/2009	17:45	26.81	434	7.90
8/12/2009	18:00	27.04	433	8.05
8/12/2009	18:15	27.02	433	8.00
8/12/2009	18:30	27.12	433	7.98
8/12/2009	18:45	27.12	433	7.99
8/12/2009	19:00	27.12	434	7.89
8/12/2009	19:15	27.10	434	7.85
8/12/2009	19:30	27.06	434	7.81
8/12/2009	19:45	27.08	433	7.71
8/12/2009	20:00	26.86	434	7.60
8/12/2009	20:15	26.95	433	7.62
8/12/2009	20:30	26.86	433	7.52
8/12/2009	20:45	26.78	433	7.46
8/12/2009	21:00	26.72	433	7.42
8/12/2009	21:15	26.62	434	7.35
8/12/2009	21:30	26.55	434	7.27
8/12/2009	21:45	26.42	434	7.23
8/12/2009	22:00	26.37	434	7.13
8/12/2009	22:15	26.27	434	7.10
8/12/2009	22:30	26.18	434	7.07
8/12/2009	22:45	26.09	434	7.00
8/12/2009	23:00	25.99	434	6.95
8/12/2009	23:15	25.90	435	6.89
8/12/2009	23:30	25.80	435	6.82
8/12/2009	23:45	25.72	435	6.76
8/13/2009	0:00	25.62	435	6.70
8/13/2009	0:15	25.54	435	6.65

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/13/2009	0:30	25.46	435	6.60
8/13/2009	0:45	25.37	435	6.51
8/13/2009	1:00	25.30	435	6.48
8/13/2009	1:15	25.22	436	6.41
8/13/2009	1:30	25.15	436	6.35
8/13/2009	1:45	25.09	436	6.31
8/13/2009	2:00	25.04	436	6.25
8/13/2009	2:15	24.96	436	6.20
8/13/2009	2:30	24.90	436	6.13
8/13/2009	2:45	24.84	436	6.09
8/13/2009	3:00	24.79	436	6.04
8/13/2009	3:15	24.73	436	6.00
8/13/2009	3:30	24.67	436	5.98
8/13/2009	3:45	24.62	436	5.91
8/13/2009	4:00	24.57	437	5.88
8/13/2009	4:15	24.51	437	5.82
8/13/2009	4:30	24.47	437	5.75
8/13/2009	4:45	24.42	437	5.73
8/13/2009	5:00	24.36	437	5.68
8/13/2009	5:15	24.32	437	5.64
8/13/2009	5:30	24.27	437	5.61
8/13/2009	5:45	24.23	437	5.55
8/13/2009	6:00	24.18	437	5.50
8/13/2009	6:15	24.13	437	5.46
8/13/2009	6:30	24.08	437	5.42
8/13/2009	6:45	24.03	437	5.39
8/13/2009	7:00	23.99	437	5.37
8/13/2009	7:15	23.93	438	5.35
8/13/2009	7:30	23.91	438	5.33
8/13/2009	7:45	23.87	438	5.32
8/13/2009	8:00	23.84	438	5.28

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/13/2009	8:15	23.81	438	5.28
8/13/2009	8:30	23.80	438	5.26
8/13/2009	8:45	23.78	438	5.31
8/13/2009	9:00	23.78	438	5.30
8/13/2009	9:15	23.80	438	5.34
8/13/2009	9:30	23.83	438	5.36
8/13/2009	9:45	23.86	438	5.40
8/13/2009	10:00	23.92	438	5.44
8/13/2009	10:15	23.95	438	5.50
8/13/2009	10:30	24.04	438	5.59
8/13/2009	10:45	24.15	438	5.74
8/13/2009	11:00	24.26	438	5.94
8/13/2009	11:15	24.38	438	6.05
8/13/2009	11:30	24.48	438	6.08
8/13/2009	11:45	24.61	438	6.31
8/13/2009	12:00	24.69	438	6.38
8/13/2009	12:15	24.87	438	6.45
8/13/2009	12:30	24.99	438	6.51
8/13/2009	12:45	25.11	438	6.62
8/13/2009	13:00	25.18	438	6.66
8/13/2009	13:15	25.23	439	6.81
8/13/2009	13:30	25.30	438	6.83
8/13/2009	13:45	25.32	438	6.90
8/13/2009	14:00	25.40	438	7.01
8/13/2009	14:15	25.44	438	6.93
8/13/2009	14:30	25.50	438	6.84
8/13/2009	14:45	25.57	438	6.81
8/13/2009	15:00	25.67	438	6.91
8/13/2009	15:15	25.74	439	6.96
8/13/2009	15:30	25.83	439	7.02
8/13/2009	15:45	25.91	439	7.02

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/13/2009	16:00	25.91	439	7.00
8/13/2009	16:15	26.06	439	6.98
8/13/2009	16:30	26.18	438	7.22
8/13/2009	16:45	26.28	438	7.25
8/13/2009	17:00	26.37	438	7.36
8/13/2009	17:15	26.48	438	7.37
8/13/2009	17:30	26.65	437	7.48
8/13/2009	17:45	26.68	437	7.54
8/13/2009	18:00	26.78	437	7.55
8/13/2009	18:15	26.87	437	7.53
8/13/2009	18:30	26.94	437	7.48
8/13/2009	18:45	26.97	437	7.60
8/13/2009	19:00	27.02	437	7.46
8/13/2009	19:15	27.03	437	7.50
8/13/2009	19:30	27.00	437	7.45
8/13/2009	19:45	26.97	437	7.33
8/13/2009	20:00	26.91	437	7.38
8/13/2009	20:15	26.92	437	7.26
8/13/2009	20:30	26.81	436	7.30
8/13/2009	20:45	26.79	437	7.22
8/13/2009	21:00	26.77	436	7.17
8/13/2009	21:15	26.65	437	7.06
8/13/2009	21:30	26.61	436	7.12
8/13/2009	21:45	26.59	437	7.01
8/13/2009	22:00	26.50	437	6.96
8/13/2009	22:15	26.41	437	6.97
8/13/2009	22:30	26.30	437	6.90
8/13/2009	22:45	26.26	437	6.84
8/13/2009	23:00	26.20	437	6.79
8/13/2009	23:15	26.09	437	6.75
8/13/2009	23:30	26.02	437	6.69

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/13/2009	23:45	25.92	437	6.69
8/14/2009	0:00	25.83	437	6.61
8/14/2009	0:15	25.76	437	6.55
8/14/2009	0:30	25.68	437	6.50
8/14/2009	0:45	25.59	437	6.49
8/14/2009	1:00	25.53	437	6.39
8/14/2009	1:15	25.44	437	6.39
8/14/2009	1:30	25.36	437	6.35
8/14/2009	1:45	25.28	438	6.32
8/14/2009	2:00	25.20	438	6.27
8/14/2009	2:15	25.11	438	6.21
8/14/2009	2:30	25.04	438	6.19
8/14/2009	2:45	24.97	437	6.13
8/14/2009	3:00	24.88	438	6.09
8/14/2009	3:15	24.80	438	6.04
8/14/2009	3:30	24.75	438	6.00
8/14/2009	3:45	24.65	438	5.94
8/14/2009	4:00	24.60	438	5.90
8/14/2009	4:15	24.53	438	5.86
8/14/2009	4:30	24.44	438	5.81
8/14/2009	4:45	24.38	439	5.76
8/14/2009	5:00	24.31	438	5.72
8/14/2009	5:15	24.25	439	5.66
8/14/2009	5:30	24.20	439	5.62
8/14/2009	5:45	24.11	439	5.58
8/14/2009	6:00	24.06	439	5.56
8/14/2009	6:15	23.98	439	5.47
8/14/2009	6:30	23.92	439	5.47
8/14/2009	6:45	23.88	439	5.43
8/14/2009	7:00	23.82	439	5.36
8/14/2009	7:15	23.77	439	5.32

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/14/2009	7:30	23.74	439	5.28
8/14/2009	7:45	23.71	439	5.21
8/14/2009	8:00	23.66	439	5.21
8/14/2009	8:15	23.64	440	5.18
8/14/2009	8:30	23.63	440	5.20
8/14/2009	8:45	23.64	440	5.18
8/14/2009	9:00	23.65	440	5.17
8/14/2009	9:15	23.67	439	5.23
8/14/2009	9:30	23.71	439	5.26
8/14/2009	9:45	23.75	440	5.27
8/14/2009	10:00	23.80	440	5.31
8/14/2009	10:15	23.88	440	5.36
8/14/2009	10:30	23.98	440	5.45
8/14/2009	10:45	24.06	440	5.64
8/14/2009	11:00	24.20	439	5.87
8/14/2009	11:15	24.35	439	6.23
8/14/2009	11:30	24.49	440	6.35
8/14/2009	11:45	24.65	440	6.40
8/14/2009	12:00	24.75	440	6.51
8/14/2009	12:15	24.92	439	6.62
8/14/2009	12:30	25.08	440	6.59
8/14/2009	12:45	25.21	439	6.77
8/14/2009	13:00	25.27	440	6.74
8/14/2009	13:15	25.36	440	6.89
8/14/2009	13:30	25.35	440	6.89
8/14/2009	13:45	25.46	439	7.02
8/14/2009	14:00	25.52	439	7.03
8/14/2009	14:15	25.57	439	6.86
8/14/2009	14:30	25.61	439	6.75
8/14/2009	14:45	25.71	440	6.70
8/14/2009	15:00	25.78	439	6.74

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/14/2009	15:15	25.82	440	6.82
8/14/2009	15:30	25.88	440	6.70
8/14/2009	15:45	26.00	439	6.84
8/14/2009	16:00	26.08	440	6.90
8/14/2009	16:15	26.20	439	7.05
8/14/2009	16:30	26.37	439	7.31
8/14/2009	16:45	26.35	439	7.20
8/14/2009	17:00	26.46	440	7.06
8/14/2009	17:15	26.61	439	7.27
8/14/2009	17:30	26.67	439	7.22
8/14/2009	17:45	26.83	439	7.33
8/14/2009	18:00	26.94	439	7.27
8/14/2009	18:15	27.02	439	7.29
8/14/2009	18:30	27.12	439	7.39
8/14/2009	18:45	27.13	439	7.13
8/14/2009	19:00	27.02	435	7.46
8/14/2009	19:15	27.18	438	7.24
8/14/2009	19:30	27.14	439	7.36
8/14/2009	19:45	27.13	438	7.30
8/14/2009	20:00	27.07	438	7.24
8/14/2009	20:15	26.92	438	7.08
8/14/2009	20:30	26.93	438	7.13
8/14/2009	20:45	26.88	438	7.10
8/14/2009	21:00	26.77	438	6.96
8/14/2009	21:15	26.71	438	7.06
8/14/2009	21:30	26.61	438	6.84
8/14/2009	21:45	26.53	438	6.94
8/14/2009	22:00	26.44	438	6.98
8/14/2009	22:15	26.34	438	6.89
8/14/2009	22:30	26.25	438	6.86
8/14/2009	22:45	26.16	438	6.89

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/14/2009	23:00	26.06	438	6.79
8/14/2009	23:15	25.95	438	6.78
8/14/2009	23:30	25.84	438	6.70
8/14/2009	23:45	25.74	438	6.67
8/15/2009	0:00	25.64	438	6.62
8/15/2009	0:15	25.55	438	6.50
8/15/2009	0:30	25.43	439	6.58
8/15/2009	0:45	25.35	439	6.51
8/15/2009	1:00	25.26	438	6.47
8/15/2009	1:15	25.15	439	6.48
8/15/2009	1:30	25.05	439	6.43
8/15/2009	1:45	24.97	439	6.39
8/15/2009	2:00	24.87	439	6.34
8/15/2009	2:15	24.79	439	6.30
8/15/2009	2:30	24.69	439	6.27
8/15/2009	2:45	24.60	439	6.23
8/15/2009	3:00	24.51	439	6.18
8/15/2009	3:15	24.43	439	6.13
8/15/2009	3:30	24.35	439	6.07
8/15/2009	3:45	24.26	439	6.04
8/15/2009	4:00	24.20	439	5.97
8/15/2009	4:15	24.11	439	5.90
8/15/2009	4:30	24.05	440	5.88
8/15/2009	4:45	23.98	440	5.83
8/15/2009	5:00	23.89	440	5.83
8/15/2009	5:15	23.82	440	5.77
8/15/2009	5:30	23.76	440	5.69
8/15/2009	5:45	23.69	440	5.67
8/15/2009	6:00	23.64	440	5.60
8/15/2009	6:15	23.58	440	5.56
8/15/2009	6:30	23.49	440	5.49

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/15/2009	6:45	23.45	440	5.45
8/15/2009	7:00	23.40	440	5.45
8/15/2009	7:15	23.34	440	5.44
8/15/2009	7:30	23.30	440	5.43
8/15/2009	7:45	23.26	440	5.38
8/15/2009	8:00	23.23	441	5.36
8/15/2009	8:15	23.22	441	5.39
8/15/2009	8:30	23.22	440	5.34
8/15/2009	8:45	23.22	441	5.37
8/15/2009	9:00	23.24	440	5.38
8/15/2009	9:15	23.26	440	5.42
8/15/2009	9:30	23.30	440	5.43
8/15/2009	9:45	23.34	440	5.44
8/15/2009	10:00	23.38	440	5.55
8/15/2009	10:15	23.48	440	5.66
8/15/2009	10:30	23.58	441	5.70
8/15/2009	10:45	23.66	440	5.93
8/15/2009	11:00	23.81	440	6.21
8/15/2009	11:15	23.93	441	6.37
8/15/2009	11:30	24.03	441	6.50
8/15/2009	11:45	24.22	440	6.50
8/15/2009	12:00	24.30	440	6.48
8/15/2009	12:15	24.45	440	6.63
8/15/2009	12:30	24.63	441	6.58
8/15/2009	12:45	24.74	440	6.78
8/15/2009	13:00	24.68	440	6.60
8/15/2009	13:15	24.81	440	6.69
8/15/2009	13:30	24.86	440	6.99
8/15/2009	13:45	24.93	439	7.17
8/15/2009	14:00	25.01	439	7.22
8/15/2009	14:15	25.08	440	7.18

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/15/2009	14:30	25.19	440	7.01
8/15/2009	14:45	25.20	441	7.06
8/15/2009	15:00	25.35	440	7.21
8/15/2009	15:15	25.40	440	7.24
8/15/2009	15:30	25.53	439	7.37
8/15/2009	15:45	25.57	439	7.41
8/15/2009	16:00	25.62	439	7.39
8/15/2009	16:15	25.68	439	7.43
8/15/2009	16:30	25.74	438	7.46
8/15/2009	16:45	25.82	441	7.57
8/15/2009	17:00	25.93	442	7.56
8/15/2009	17:15	26.01	440	7.78
8/15/2009	17:30	26.13	438	7.62
8/15/2009	17:45	26.24	439	7.75
8/15/2009	18:00	26.30	439	7.71
8/15/2009	18:15	26.38	440	7.69
8/15/2009	18:30	26.48	439	7.76
8/15/2009	18:45	26.59	439	7.75
8/15/2009	19:00	26.63	437	7.73
8/15/2009	19:15	26.65	437	7.69
8/15/2009	19:30	26.68	437	7.72
8/15/2009	19:45	26.65	437	7.64
8/15/2009	20:00	26.62	437	7.66
8/15/2009	20:15	26.60	437	7.51
8/15/2009	20:30	26.66	437	7.49
8/15/2009	20:45	26.53	437	7.44
8/15/2009	21:00	26.51	437	7.41
8/15/2009	21:15	26.54	437	7.41
8/15/2009	21:30	26.47	437	7.35
8/15/2009	21:45	26.40	437	7.37
8/15/2009	22:00	26.34	436	7.23

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/15/2009	22:15	26.26	437	7.25
8/15/2009	22:30	26.19	437	7.13
8/15/2009	22:45	26.10	437	7.07
8/15/2009	23:00	26.05	437	7.11
8/15/2009	23:15	25.99	437	7.04
8/15/2009	23:30	25.91	437	6.97
8/15/2009	23:45	25.86	437	6.94
8/16/2009	0:00	25.78	437	6.87
8/16/2009	0:15	25.72	437	6.82
8/16/2009	0:30	25.64	437	6.76
8/16/2009	0:45	25.59	437	6.69
8/16/2009	1:00	25.53	437	6.67
8/16/2009	1:15	25.46	437	6.60
8/16/2009	1:30	25.42	437	6.51
8/16/2009	1:45	25.36	437	6.52
8/16/2009	2:00	25.30	437	6.46
8/16/2009	2:15	25.25	438	6.41
8/16/2009	2:30	25.19	438	6.36
8/16/2009	2:45	25.15	438	6.25
8/16/2009	3:00	25.11	438	6.21
8/16/2009	3:15	25.05	438	6.15
8/16/2009	3:30	25.00	438	6.13
8/16/2009	3:45	24.94	438	6.07
8/16/2009	4:00	24.90	438	5.97
8/16/2009	4:15	24.85	438	5.97
8/16/2009	4:30	24.81	438	5.87
8/16/2009	4:45	24.75	438	5.86
8/16/2009	5:00	24.72	437	5.82
8/16/2009	5:15	24.66	437	5.77
8/16/2009	5:30	24.62	438	5.67
8/16/2009	5:45	24.57	437	5.65

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/16/2009	6:00	24.53	438	5.61
8/16/2009	6:15	24.50	437	5.53
8/16/2009	6:30	24.46	437	5.44
8/16/2009	6:45	24.43	437	5.38
8/16/2009	7:00	24.40	437	5.38
8/16/2009	7:15	24.37	438	5.37
8/16/2009	7:30	24.34	437	5.30
8/16/2009	7:45	24.32	439	5.28
8/16/2009	8:00	24.30	438	5.21
8/16/2009	8:15	24.29	439	5.20
8/16/2009	8:30	24.27	437	5.17
8/16/2009	8:45	24.26	437	5.14
8/16/2009	9:00	24.25	437	5.05
8/16/2009	9:15	24.25	437	5.07
8/16/2009	9:30	24.24	437	5.08
8/16/2009	9:45	24.24	437	5.02
8/16/2009	10:00	24.22	432	5.21
8/16/2009	10:15	24.22	431	5.25
8/16/2009	10:30	24.21	430	5.31
8/16/2009	10:45	24.24	430	5.31
8/16/2009	11:00	24.26	429	5.33
8/16/2009	11:15	24.26	429	5.32
8/16/2009	11:30	24.28	428	5.33
8/16/2009	11:45	24.30	428	5.32
8/16/2009	12:00	24.32	428	5.34
8/16/2009	12:15	24.33	427	5.42
8/16/2009	12:30	24.35	427	5.45
8/16/2009	12:45	24.40	428	5.59
8/16/2009	13:00	24.42	428	5.45
8/16/2009	13:15	24.47	429	5.52
8/16/2009	13:30	24.49	427	5.48

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/16/2009	13:45	24.50	429	5.52
8/16/2009	14:00	24.52	428	5.60
8/16/2009	14:15	24.54	426	5.66
8/16/2009	14:30	24.56	426	5.62
8/16/2009	14:45	24.57	425	5.80
8/16/2009	15:00	24.58	425	5.83
8/16/2009	15:15	24.59	425	5.83
8/16/2009	15:30	24.60	424	5.78
8/16/2009	15:45	24.61	424	5.87
8/16/2009	16:00	24.62	424	5.90
8/16/2009	16:15	24.62	424	5.90
8/16/2009	16:30	24.64	423	5.97
8/16/2009	16:45	24.66	424	5.96
8/16/2009	17:00	24.67	423	6.04
8/16/2009	17:15	24.69	423	6.01
8/16/2009	17:30	24.71	423	6.01
8/16/2009	17:45	24.73	422	6.10
8/16/2009	18:00	24.74	422	6.11
8/16/2009	18:15	24.76	423	6.14
8/16/2009	18:30	24.76	423	6.08
8/16/2009	18:45	24.75	423	6.13
8/16/2009	19:00	24.74	423	6.15
8/16/2009	19:15	24.73	422	6.11
8/16/2009	19:30	24.72	423	6.07
8/16/2009	19:45	24.70	423	6.11
8/16/2009	20:00	24.69	422	6.05
8/16/2009	20:15	24.67	422	6.12
8/16/2009	20:30	24.64	422	6.09
8/16/2009	20:45	24.63	421	6.03
8/16/2009	21:00	24.60	421	6.04
8/16/2009	21:15	24.58	421	6.00



Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/16/2009	21:30	24.54	421	6.01
8/16/2009	21:45	24.52	421	5.94
8/16/2009	22:00	24.49	421	5.89
8/16/2009	22:15	24.46	421	5.86
8/16/2009	22:30	24.44	421	5.79
8/16/2009	22:45	24.40	421	5.76
8/16/2009	23:00	24.38	421	5.72
8/16/2009	23:15	24.35	421	5.68
8/16/2009	23:30	24.33	421	5.61
8/16/2009	23:45	24.30	421	5.72
8/17/2009	0:00	24.28	421	5.67
8/17/2009	0:15	24.26	421	5.63
8/17/2009	0:30	24.24	421	5.60
8/17/2009	0:45	24.22	421	5.59
8/17/2009	1:00	24.20	422	5.59
8/17/2009	1:15	24.18	421	5.50
8/17/2009	1:30	24.17	421	5.49
8/17/2009	1:45	24.12	416	5.47
8/17/2009	2:00	24.01	412	5.68
8/17/2009	2:15	23.81	400	6.03
8/17/2009	2:30	23.69	394	6.09
8/17/2009	2:45	23.60	388	6.09
8/17/2009	3:00	23.53	386	6.11
8/17/2009	3:15	23.53	389	6.06
8/17/2009	3:30	23.49	389	6.02
8/17/2009	3:45	23.44	389	6.03
8/17/2009	4:00	23.36	387	6.03
8/17/2009	4:15	23.28	381	6.18
8/17/2009	4:30	23.20	376	6.27
8/17/2009	4:45	23.12	370	6.32
8/17/2009	5:00	23.06	367	6.37

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/17/2009	5:15	23.02	365	6.31
8/17/2009	5:30	22.97	362	6.34
8/17/2009	5:45	22.94	361	6.34
8/17/2009	6:00	22.90	358	6.38
8/17/2009	6:15	22.86	357	6.36
8/17/2009	6:30	22.83	355	6.35
8/17/2009	6:45	22.80	355	6.36
8/17/2009	7:00	22.78	354	6.34
8/17/2009	7:15	22.75	348	6.29
8/17/2009	7:30	22.73	353	6.28
8/17/2009	7:45	22.73	354	6.25
8/17/2009	8:00	22.74	347	6.14
8/17/2009	8:15	22.75	353	6.18
8/17/2009	8:30	22.76	354	6.15
8/17/2009	8:45	22.76	359	6.16
8/17/2009	9:00	22.78	361	6.18
8/17/2009	9:15	22.80	363	6.11
8/17/2009	9:30	22.83	364	6.09
8/17/2009	9:45	22.85	366	6.06
8/17/2009	10:00	22.88	367	6.10
8/17/2009	10:15	22.95	368	6.14
8/17/2009	10:30	23.03	370	6.18
8/17/2009	10:45	23.12	370	6.26
8/17/2009	11:00	23.18	371	6.27
8/17/2009	11:15	23.21	372	6.32
8/17/2009	11:30	23.20	372	6.29
8/17/2009	11:45	23.19	373	6.25
8/17/2009	12:00	23.18	373	6.23
8/17/2009	12:15	23.12	370	6.31
8/17/2009	12:30	23.08	368	6.41
8/17/2009	12:45	23.06	366	6.40

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/17/2009	13:00	23.05	366	6.45
8/17/2009	13:15	23.05	366	6.46
8/17/2009	13:30	23.04	365	6.48
8/17/2009	13:45	23.02	365	6.46
8/17/2009	14:00	23.00	364	6.51
8/17/2009	14:15	23.02	365	6.53
8/17/2009	14:30	23.01	365	6.50
8/17/2009	14:45	22.98	365	6.49
8/17/2009	15:00	22.93	365	6.46
8/17/2009	15:15	22.89	365	6.42
8/17/2009	15:30	22.85	362	6.41
8/17/2009	15:45	22.84	362	6.45
8/17/2009	16:00	22.88	361	6.52
8/17/2009	16:15	22.92	360	6.53
8/17/2009	16:30	22.97	361	6.58
8/17/2009	16:45	22.79	359	6.31
8/17/2009	17:00	22.79	344	6.51
8/17/2009	17:15	22.83	345	6.53
8/17/2009	17:30	22.87	358	6.52
8/17/2009	17:45	22.77	365	6.33
8/17/2009	18:00	22.72	378	6.45
8/17/2009	18:15	22.81	406	6.53
8/17/2009	18:30	22.84	415	6.42
8/17/2009	18:45	22.69	388	6.40
8/17/2009	19:00	22.44	343	6.36
8/17/2009	19:15	22.29	332	6.28
8/17/2009	19:30	22.19	326	6.14
8/17/2009	19:45	22.09	305	5.94
8/17/2009	20:00	22.02	296	5.78
8/17/2009	20:15	22.03	311	5.74
8/17/2009	20:30	22.11	329	5.65

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/17/2009	20:45	22.17	333	5.43
8/17/2009	21:00	22.15	330	5.08
8/17/2009	21:15	22.06	330	4.79
8/17/2009	21:30	21.96	334	4.67
8/17/2009	21:45	21.88	337	4.67
8/17/2009	22:00	21.84	331	4.79
8/17/2009	22:15	21.83	310	4.97
8/17/2009	22:30	21.82	277	5.15
8/17/2009	22:45	21.81	244	5.33
8/17/2009	23:00	21.78	217	5.45
8/17/2009	23:15	21.75	200	5.56
8/17/2009	23:30	21.72	191	5.62
8/17/2009	23:45	21.70	186	5.68
8/18/2009	0:00	21.68	182	5.72
8/18/2009	0:15	21.66	177	5.76
8/18/2009	0:30	21.64	171	5.80
8/18/2009	0:45	21.63	165	5.83
8/18/2009	1:00	21.62	160	5.88
8/18/2009	1:15	21.62	155	5.93
8/18/2009	1:30	21.61	152	5.97
8/18/2009	1:45	21.62	149	6.02
8/18/2009	2:00	21.62	148	6.08
8/18/2009	2:15	21.62	147	6.11
8/18/2009	2:30	21.62	146	6.16
8/18/2009	2:45	21.63	146	6.19
8/18/2009	3:00	21.63	146	6.22
8/18/2009	3:15	21.63	147	6.25
8/18/2009	3:30	21.64	147	6.28
8/18/2009	3:45	21.64	148	6.30
8/18/2009	4:00	21.64	149	6.33
8/18/2009	4:15	21.65	150	6.35

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/18/2009	4:30	21.65	152	6.37
8/18/2009	4:45	21.66	154	6.38
8/18/2009	5:00	21.67	156	6.39
8/18/2009	5:15	21.68	158	6.39
8/18/2009	5:30	21.69	160	6.41
8/18/2009	5:45	21.70	162	6.42
8/18/2009	6:00	21.71	164	6.44
8/18/2009	6:15	21.71	166	6.46
8/18/2009	6:30	21.72	168	6.47
8/18/2009	6:45	21.73	170	6.48
8/18/2009	7:00	21.74	173	6.50
8/18/2009	7:15	21.75	175	6.50
8/18/2009	7:30	21.76	176	6.53
8/18/2009	7:45	21.77	177	6.53
8/18/2009	8:00	21.79	177	6.55
8/18/2009	8:15	21.81	176	6.56
8/18/2009	8:30	21.84	176	6.58
8/18/2009	8:45	21.87	175	6.58
8/18/2009	9:00	21.90	176	6.59
8/18/2009	9:15	21.93	176	6.59
8/18/2009	9:30	21.97	176	6.59
8/18/2009	9:45	22.00	176	6.60
8/18/2009	10:00	22.03	175	6.59
8/18/2009	10:15	22.05	172	6.60
8/18/2009	10:30	22.08	168	6.61
8/18/2009	10:45	22.10	163	6.62
8/18/2009	11:00	22.11	159	6.62
8/18/2009	11:15	22.16	156	6.62
8/18/2009	11:30	22.19	154	6.65
8/18/2009	11:45	22.22	152	6.66
8/18/2009	12:00	22.26	152	6.68

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/18/2009	12:15	22.27	153	6.67
8/18/2009	12:30	22.34	153	6.66
8/18/2009	12:45	22.39	154	6.66
8/18/2009	13:00	22.39	155	6.67
8/18/2009	13:15	22.40	156	6.66
8/18/2009	13:30	22.43	155	6.66
8/18/2009	13:45	22.47	155	6.67
8/18/2009	14:00	22.50	155	6.68
8/18/2009	14:15	22.50	154	6.71
8/18/2009	14:30	22.51	154	6.73
8/18/2009	14:45	22.54	154	6.74
8/18/2009	15:00	22.59	154	6.75
8/18/2009	15:15	22.59	154	6.77
8/18/2009	15:30	22.61	154	6.77
8/18/2009	15:45	22.63	155	6.79
8/18/2009	16:00	22.65	155	6.78
8/18/2009	16:15	22.68	156	6.78
8/18/2009	16:30	22.70	156	6.79
8/18/2009	16:45	22.73	157	6.79
8/18/2009	17:00	22.74	157	6.80
8/18/2009	17:15	22.74	158	6.81
8/18/2009	17:30	22.74	158	6.82
8/18/2009	17:45	22.76	159	6.82
8/18/2009	18:00	22.77	159	6.83
8/18/2009	18:15	22.79	160	6.83
8/18/2009	18:30	22.80	160	6.83
8/18/2009	18:45	22.80	161	6.84
8/18/2009	19:00	22.80	161	6.84
8/18/2009	19:15	22.81	162	6.85
8/18/2009	19:30	22.81	162	6.86
8/18/2009	19:45	22.82	163	6.85

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/18/2009	20:00	22.82	163	6.85
8/18/2009	20:15	22.81	163	6.86
8/18/2009	20:30	22.80	163	6.87
8/18/2009	20:45	22.79	164	6.86
8/18/2009	21:00	22.78	164	6.88
8/18/2009	21:15	22.76	164	6.88
8/18/2009	21:30	22.75	164	6.89
8/18/2009	21:45	22.74	164	6.88
8/18/2009	22:00	22.73	164	6.89
8/18/2009	22:15	22.73	164	6.90
8/18/2009	22:30	22.72	164	6.90
8/18/2009	22:45	22.71	164	6.90
8/18/2009	23:00	22.69	165	6.92
8/18/2009	23:15	22.68	165	6.91
8/18/2009	23:30	22.66	165	6.92
8/18/2009	23:45	22.64	166	6.93
8/19/2009	0:00	22.62	166	6.93
8/19/2009	0:15	22.60	166	6.95
8/19/2009	0:30	22.58	166	6.94
8/19/2009	0:45	22.56	166	6.95
8/19/2009	1:00	22.54	166	6.95
8/19/2009	1:15	22.52	167	6.96
8/19/2009	1:30	22.50	167	6.95
8/19/2009	1:45	22.48	167	6.97
8/19/2009	2:00	22.46	166	6.98
8/19/2009	2:15	22.45	166	6.99
8/19/2009	2:30	22.43	166	6.98
8/19/2009	2:45	22.41	166	7.00
8/19/2009	3:00	22.39	166	7.00
8/19/2009	3:15	22.37	166	7.01
8/19/2009	3:30	22.34	166	7.03

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/19/2009	3:45	22.32	165	7.02
8/19/2009	4:00	22.30	165	7.02
8/19/2009	4:15	22.28	165	7.02
8/19/2009	4:30	22.26	165	7.03
8/19/2009	4:45	22.25	165	7.04
8/19/2009	5:00	22.23	165	7.03
8/19/2009	5:15	22.21	165	7.04
8/19/2009	5:30	22.19	165	7.06
8/19/2009	5:45	22.17	165	7.05
8/19/2009	6:00	22.15	165	7.06
8/19/2009	6:15	22.13	165	7.06
8/19/2009	6:30	22.12	166	7.06
8/19/2009	6:45	22.10	166	7.08
8/19/2009	7:00	22.08	166	7.07
8/19/2009	7:15	22.07	166	7.08
8/19/2009	7:30	22.06	166	7.08
8/19/2009	7:45	22.06	166	7.08
8/19/2009	8:00	22.06	166	7.08
8/19/2009	8:15	22.06	167	7.09
8/19/2009	8:30	22.07	167	7.10
8/19/2009	8:45	22.07	167	7.09
8/19/2009	9:00	22.08	167	7.10
8/19/2009	9:15	22.10	167	7.09
8/19/2009	9:30	22.11	167	7.12
8/19/2009	9:45	22.13	168	7.11
8/19/2009	10:00	22.16	168	7.11
8/19/2009	10:15	22.19	168	7.12
8/19/2009	10:30	22.20	168	7.13
8/19/2009	10:45	22.22	168	7.14
8/19/2009	11:00	22.24	168	7.13
8/19/2009	11:15	22.27	168	7.14

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/19/2009	11:30	22.28	168	7.13
8/19/2009	11:45	22.29	168	7.14
8/19/2009	12:00	22.27	168	7.14
8/19/2009	12:15	22.28	166	7.18
8/19/2009	12:30	22.29	166	7.18
8/19/2009	12:45	22.29	166	7.21
8/19/2009	13:00	22.34	166	7.20
8/19/2009	13:15	22.43	166	7.20
8/19/2009	13:30	22.55	167	7.20
8/19/2009	13:45	22.64	167	7.20
8/19/2009	14:00	22.70	167	7.20
8/19/2009	14:15	22.75	167	7.21
8/19/2009	14:30	22.81	167	7.20
8/19/2009	14:45	22.85	167	7.20
8/19/2009	15:00	22.89	167	7.22
8/19/2009	15:15	22.93	167	7.20
8/19/2009	15:30	22.99	167	7.20
8/19/2009	15:45	23.00	167	7.20
8/19/2009	16:00	22.99	167	7.20
8/19/2009	16:15	23.01	167	7.20
8/19/2009	16:30	23.05	168	7.20
8/19/2009	16:45	23.07	168	7.19
8/19/2009	17:00	23.11	168	7.19
8/19/2009	17:15	23.14	167	7.18
8/19/2009	17:30	23.15	167	7.18
8/19/2009	17:45	23.15	167	7.14
8/19/2009	18:00	23.15	167	7.13
8/19/2009	18:15	23.14	167	7.13
8/19/2009	18:30	23.14	166	7.13
8/19/2009	18:45	23.13	166	7.12
8/19/2009	19:00	23.12	166	7.11

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/19/2009	19:15	23.12	166	7.12
8/19/2009	19:30	23.12	167	7.12
8/19/2009	19:45	23.14	167	7.12
8/19/2009	20:00	23.15	168	7.12
8/19/2009	20:15	23.17	168	7.11
8/19/2009	20:30	23.18	169	7.11
8/19/2009	20:45	23.18	169	7.09
8/19/2009	21:00	23.18	169	7.11
8/19/2009	21:15	23.16	170	7.09
8/19/2009	21:30	23.14	170	7.08
8/19/2009	21:45	23.12	170	7.09
8/19/2009	22:00	23.10	170	7.09
8/19/2009	22:15	23.09	170	7.09
8/19/2009	22:30	23.08	170	7.07
8/19/2009	22:45	23.08	170	7.06
8/19/2009	23:00	23.08	170	7.06
8/19/2009	23:15	23.08	170	7.07
8/19/2009	23:30	23.08	170	7.05
8/19/2009	23:45	23.07	170	7.05
8/20/2009	0:00	23.06	170	7.05
8/20/2009	0:15	23.05	170	7.03
8/20/2009	0:30	23.03	171	7.04
8/20/2009	0:45	23.01	173	7.04
8/20/2009	1:00	22.99	175	7.04
8/20/2009	1:15	22.97	177	7.04
8/20/2009	1:30	22.96	177	7.06
8/20/2009	1:45	22.93	176	7.08
8/20/2009	2:00	22.90	174	7.12
8/20/2009	2:15	22.89	173	7.14
8/20/2009	2:30	22.88	172	7.13
8/20/2009	2:45	22.87	172	7.13

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/20/2009	3:00	22.84	172	7.11
8/20/2009	3:15	22.81	172	7.15
8/20/2009	3:30	22.78	173	7.15
8/20/2009	3:45	22.74	173	7.17
8/20/2009	4:00	22.71	174	7.18
8/20/2009	4:15	22.67	175	7.17
8/20/2009	4:30	22.63	176	7.17
8/20/2009	4:45	22.60	176	7.15
8/20/2009	5:00	22.58	174	7.12
8/20/2009	5:15	22.56	173	7.06
8/20/2009	5:30	22.56	173	6.97
8/20/2009	5:45	22.57	174	6.88
8/20/2009	6:00	22.59	175	6.87
8/20/2009	6:15	22.59	176	6.90
8/20/2009	6:30	22.61	177	6.91
8/20/2009	6:45	22.62	178	6.91
8/20/2009	7:00	22.62	179	6.81
8/20/2009	7:15	22.63	186	6.61
8/20/2009	7:30	22.68	194	6.39
8/20/2009	7:45	22.76	199	6.28
8/20/2009	8:00	22.84	200	6.27
8/20/2009	8:15	22.85	193	6.34
8/20/2009	8:30	22.79	181	6.43
8/20/2009	8:45	22.69	169	6.46
8/20/2009	9:00	22.54	159	6.45
8/20/2009	9:15	22.38	149	6.43
8/20/2009	9:30	22.22	139	6.43
8/20/2009	9:45	22.07	128	6.41
8/20/2009	10:00	21.94	118	6.41
8/20/2009	10:15	21.85	110	6.42
8/20/2009	10:30	21.81	104	6.44

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/20/2009	10:45	21.79	100	6.43
8/20/2009	11:00	21.79	98	6.45
8/20/2009	11:15	21.82	97	6.46
8/20/2009	11:30	21.85	97	6.45
8/20/2009	11:45	21.89	98	6.46
8/20/2009	12:00	21.93	99	6.44
8/20/2009	12:15	21.98	100	6.43
8/20/2009	12:30	22.06	100	6.43
8/20/2009	12:45	22.14	101	6.43
8/20/2009	13:00	22.20	102	6.42
8/20/2009	13:15	22.27	103	6.41
8/20/2009	13:30	22.34	104	6.41
8/20/2009	13:45	22.40	105	6.40
8/20/2009	14:00	22.45	106	6.40
8/20/2009	14:15	22.50	107	6.42
8/20/2009	14:30	22.54	108	6.41
8/20/2009	14:45	22.59	110	6.43
8/20/2009	15:00	22.63	111	6.43
8/20/2009	15:15	22.65	113	6.42
8/20/2009	15:30	22.69	115	6.42
8/20/2009	15:45	22.70	117	6.43
8/20/2009	16:00	22.73	120	6.40
8/20/2009	16:15	22.75	123	6.39
8/20/2009	16:30	22.76	127	6.37
8/20/2009	16:45	22.76	130	6.38
8/20/2009	17:00	22.75	131	6.38
8/20/2009	17:15	22.72	132	6.38
8/20/2009	17:30	22.69	132	6.40
8/20/2009	17:45	22.66	131	6.39
8/20/2009	18:00	22.63	131	6.40
8/20/2009	18:15	22.60	131	6.42

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/20/2009	18:30	22.58	132	6.44
8/20/2009	18:45	22.54	132	6.47
8/20/2009	19:00	22.50	133	6.48
8/20/2009	19:15	22.47	134	6.49
8/20/2009	19:30	22.43	134	6.49
8/20/2009	19:45	22.40	134	6.51
8/20/2009	20:00	22.37	135	6.50
8/20/2009	20:15	22.35	135	6.50
8/20/2009	20:30	22.34	134	6.52
8/20/2009	20:45	22.32	134	6.54
8/20/2009	21:00	22.31	134	6.53
8/20/2009	21:15	22.31	133	6.55
8/20/2009	21:30	22.30	133	6.57
8/20/2009	21:45	22.30	132	6.58
8/20/2009	22:00	22.29	132	6.61
8/20/2009	22:15	22.29	132	6.63
8/20/2009	22:30	22.29	132	6.65
8/20/2009	22:45	22.28	133	6.67
8/20/2009	23:00	22.28	133	6.68
8/20/2009	23:15	22.27	134	6.70
8/20/2009	23:30	22.26	134	6.71
8/20/2009	23:45	22.25	135	6.72
8/21/2009	0:00	22.24	136	6.74
8/21/2009	0:15	22.23	136	6.73
8/21/2009	0:30	22.22	137	6.76
8/21/2009	0:45	22.21	138	6.76
8/21/2009	1:00	22.19	138	6.77
8/21/2009	1:15	22.17	139	6.77
8/21/2009	1:30	22.15	140	6.77
8/21/2009	1:45	22.13	140	6.78
8/21/2009	2:00	22.11	141	6.77

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/21/2009	2:15	22.09	141	6.77
8/21/2009	2:30	22.07	141	6.79
8/21/2009	2:45	22.06	142	6.79
8/21/2009	3:00	22.04	142	6.80
8/21/2009	3:15	22.02	142	6.81
8/21/2009	3:30	22.00	142	6.82
8/21/2009	3:45	21.97	142	6.82
8/21/2009	4:00	21.95	142	6.84
8/21/2009	4:15	21.93	143	6.83
8/21/2009	4:30	21.92	143	6.85
8/21/2009	4:45	21.91	143	6.85
8/21/2009	5:00	21.90	143	6.85
8/21/2009	5:15	21.88	144	6.87
8/21/2009	5:30	21.87	144	6.88
8/21/2009	5:45	21.86	144	6.88
8/21/2009	6:00	21.85	144	6.88
8/21/2009	6:15	21.83	144	6.90
8/21/2009	6:30	21.82	144	6.92
8/21/2009	6:45	21.81	145	6.92
8/21/2009	7:00	21.79	145	6.93
8/21/2009	7:15	21.78	145	6.93
8/21/2009	7:30	21.76	145	6.94
8/21/2009	7:45	21.75	145	6.95
8/21/2009	8:00	21.73	145	6.97
8/21/2009	8:15	21.72	145	6.98
8/21/2009	8:30	21.71	145	6.99
8/21/2009	8:45	21.70	146	7.01
8/21/2009	9:00	21.70	146	7.02
8/21/2009	9:15	21.70	146	7.03
8/21/2009	9:30	21.71	146	7.03
8/21/2009	9:45	21.72	147	7.05

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/21/2009	10:00	21.73	147	7.06
8/21/2009	10:15	21.74	148	7.06
8/21/2009	10:30	21.75	148	7.07
8/21/2009	10:45	21.78	148	7.08
8/21/2009	11:00	21.77	149	7.08
8/21/2009	11:15	21.81	149	7.10
8/21/2009	11:30	21.81	149	7.11
8/21/2009	11:45	21.82	149	7.11
8/21/2009	12:00	21.81	149	7.11
8/21/2009	12:15	21.81	149	7.13
8/21/2009	12:30	21.81	149	7.13
8/21/2009	12:45	21.82	149	7.14
8/21/2009	13:00	21.81	149	7.15
8/21/2009	13:15	21.86	149	7.15
8/21/2009	13:30	21.88	149	7.17
8/21/2009	13:45	21.89	149	7.17
8/21/2009	14:00	21.90	149	7.18
8/21/2009	14:15	21.91	149	7.18
8/21/2009	14:30	21.93	149	7.19
8/21/2009	14:45	21.93	150	7.20
8/21/2009	15:00	21.92	150	7.22
8/21/2009	15:15	21.93	150	7.22
8/21/2009	15:30	21.96	150	7.23
8/21/2009	15:45	21.94	151	7.22
8/21/2009	16:00	21.89	151	7.27
8/21/2009	16:15	21.93	151	7.25
8/21/2009	16:30	21.95	151	7.27
8/21/2009	16:45	21.95	152	7.25
8/21/2009	17:00	21.95	152	7.25
8/21/2009	17:15	21.94	152	7.25
8/21/2009	17:30	21.93	152	7.26

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/21/2009	17:45	21.93	153	7.27
8/21/2009	18:00	21.93	153	7.26
8/21/2009	18:15	21.93	153	7.25
8/21/2009	18:30	21.93	153	7.26
8/21/2009	18:45	21.92	153	7.26
8/21/2009	19:00	21.89	154	7.27
8/21/2009	19:15	21.87	154	7.26
8/21/2009	19:30	21.83	154	7.27
8/21/2009	19:45	21.80	154	7.27
8/21/2009	20:00	21.77	154	7.26
8/21/2009	20:15	21.75	154	7.27
8/21/2009	20:30	21.72	155	7.29
8/21/2009	20:45	21.69	155	7.28
8/21/2009	21:00	21.67	155	7.27
8/21/2009	21:15	21.65	155	7.28
8/21/2009	21:30	21.63	155	7.28
8/21/2009	21:45	21.61	155	7.28
8/21/2009	22:00	21.58	155	7.29
8/21/2009	22:15	21.56	155	7.29
8/21/2009	22:30	21.53	155	7.30
8/21/2009	22:45	21.50	155	7.32
8/21/2009	23:00	21.48	154	7.31
8/21/2009	23:15	21.45	156	7.31
8/21/2009	23:30	21.42	155	7.30
8/21/2009	23:45	21.39	155	7.30
8/22/2009	0:00	21.36	155	7.33
8/22/2009	0:15	21.32	155	7.33
8/22/2009	0:30	21.29	155	7.34
8/22/2009	0:45	21.25	155	7.36
8/22/2009	1:00	21.22	155	7.35
8/22/2009	1:15	21.19	155	7.35



Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/22/2009	1:30	21.15	155	7.36
8/22/2009	1:45	21.12	155	7.37
8/22/2009	2:00	21.08	155	7.36
8/22/2009	2:15	21.05	155	7.37
8/22/2009	2:30	21.02	155	7.37
8/22/2009	2:45	20.98	155	7.38
8/22/2009	3:00	20.95	155	7.38
8/22/2009	3:15	20.91	155	7.40
8/22/2009	3:30	20.87	155	7.40
8/22/2009	3:45	20.84	155	7.42
8/22/2009	4:00	20.80	156	7.41
8/22/2009	4:15	20.76	156	7.42
8/22/2009	4:30	20.73	156	7.43
8/22/2009	4:45	20.69	156	7.42
8/22/2009	5:00	20.65	156	7.43
8/22/2009	5:15	20.62	156	7.45
8/22/2009	5:30	20.58	157	7.43
8/22/2009	5:45	20.56	157	7.45
8/22/2009	6:00	20.51	157	7.46
8/22/2009	6:15	20.49	157	7.47
8/22/2009	6:30	20.47	157	7.48
8/22/2009	6:45	20.44	157	7.46
8/22/2009	7:00	20.40	158	7.49
8/22/2009	7:15	20.38	158	7.50
8/22/2009	7:30	20.35	158	7.50
8/22/2009	7:45	20.33	158	7.52
8/22/2009	8:00	20.31	158	7.51
8/22/2009	8:15	20.29	158	7.51
8/22/2009	8:30	20.28	158	7.53
8/22/2009	8:45	20.27	159	7.54
8/22/2009	9:00	20.27	159	7.55

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/22/2009	9:15	20.28	159	7.56
8/22/2009	9:30	20.29	159	7.56
8/22/2009	9:45	20.32	159	7.59
8/22/2009	10:00	20.35	159	7.59
8/22/2009	10:15	20.40	160	7.59
8/22/2009	10:30	20.43	160	7.60
8/22/2009	10:45	20.48	160	7.62
8/22/2009	11:00	20.53	160	7.62
8/22/2009	11:15	20.58	161	7.63
8/22/2009	11:30	20.66	161	7.66
8/22/2009	11:45	20.72	161	7.65
8/22/2009	12:00	20.75	161	7.68
8/22/2009	12:15	20.75	161	7.67
8/22/2009	12:30	20.80	162	7.68
8/22/2009	12:45	20.81	162	7.68
8/22/2009	13:00	20.86	162	7.69
8/22/2009	13:15	20.90	163	7.69
8/22/2009	13:30	21.01	163	7.72
8/22/2009	13:45	21.05	163	7.72
8/22/2009	14:00	21.12	164	7.74
8/22/2009	14:15	21.18	164	7.73
8/22/2009	14:30	21.24	164	7.75
8/22/2009	14:45	21.25	165	7.75
8/22/2009	15:00	21.23	165	7.74
8/22/2009	15:15	21.22	165	7.75
8/22/2009	15:30	21.23	165	7.74
8/22/2009	15:45	21.24	166	7.77
8/22/2009	16:00	21.26	166	7.74
8/22/2009	16:15	21.27	166	7.73
8/22/2009	16:30	21.29	166	7.74
8/22/2009	16:45	21.29	166	7.73

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/22/2009	17:00	21.31	166	7.74
8/22/2009	17:15	21.32	167	7.73
8/22/2009	17:30	21.32	167	7.74
8/22/2009	17:45	21.33	167	7.74
8/22/2009	18:00	21.34	167	7.72
8/22/2009	18:15	21.35	167	7.70
8/22/2009	18:30	21.36	167	7.70
8/22/2009	18:45	21.36	167	7.70
8/22/2009	19:00	21.36	168	7.69
8/22/2009	19:15	21.36	168	7.69
8/22/2009	19:30	21.35	168	7.66
8/22/2009	19:45	21.35	168	7.66
8/22/2009	20:00	21.34	169	7.64
8/22/2009	20:15	21.32	169	7.64
8/22/2009	20:30	21.30	169	7.64
8/22/2009	20:45	21.27	169	7.61
8/22/2009	21:00	21.23	169	7.60
8/22/2009	21:15	21.19	170	7.58
8/22/2009	21:30	21.15	170	7.58
8/22/2009	21:45	21.11	170	7.59
8/22/2009	22:00	21.08	170	7.58
8/22/2009	22:15	21.04	170	7.57
8/22/2009	22:30	21.01	171	7.56
8/22/2009	22:45	20.97	171	7.55
8/22/2009	23:00	20.93	171	7.57
8/22/2009	23:15	20.90	171	7.54
8/22/2009	23:30	20.86	171	7.56
8/22/2009	23:45	20.82	171	7.55
8/23/2009	0:00	20.79	172	7.54
8/23/2009	0:15	20.76	172	7.55
8/23/2009	0:30	20.73	172	7.52

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/23/2009	0:45	20.69	172	7.53
8/23/2009	1:00	20.67	172	7.53
8/23/2009	1:15	20.63	173	7.53
8/23/2009	1:30	20.61	173	7.51
8/23/2009	1:45	20.58	173	7.51
8/23/2009	2:00	20.54	173	7.52
8/23/2009	2:15	20.51	173	7.50
8/23/2009	2:30	20.46	174	7.50
8/23/2009	2:45	20.44	174	7.50
8/23/2009	3:00	20.39	174	7.52
8/23/2009	3:15	20.35	174	7.52
8/23/2009	3:30	20.33	175	7.50
8/23/2009	3:45	20.29	175	7.51
8/23/2009	4:00	20.26	175	7.50
8/23/2009	4:15	20.22	175	7.49
8/23/2009	4:30	20.18	175	7.53
8/23/2009	4:45	20.14	176	7.52
8/23/2009	5:00	20.10	176	7.50
8/23/2009	5:15	20.06	176	7.52
8/23/2009	5:30	20.01	176	7.52
8/23/2009	5:45	19.97	176	7.54
8/23/2009	6:00	19.92	176	7.53
8/23/2009	6:15	19.88	177	7.53
8/23/2009	6:30	19.83	177	7.54
8/23/2009	6:45	19.79	177	7.55
8/23/2009	7:00	19.76	177	7.57
8/23/2009	7:15	19.72	177	7.55
8/23/2009	7:30	19.68	177	7.56
8/23/2009	7:45	19.66	178	7.57
8/23/2009	8:00	19.63	178	7.60
8/23/2009	8:15	19.62	178	7.59

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/23/2009	8:30	19.61	178	7.60
8/23/2009	8:45	19.61	178	7.62
8/23/2009	9:00	19.61	178	7.62
8/23/2009	9:15	19.63	179	7.64
8/23/2009	9:30	19.66	179	7.67
8/23/2009	9:45	19.70	179	7.67
8/23/2009	10:00	19.75	179	7.70
8/23/2009	10:15	19.81	179	7.73
8/23/2009	10:30	19.88	180	7.77
8/23/2009	10:45	19.95	180	7.77
8/23/2009	11:00	19.93	180	7.80
8/23/2009	11:15	19.96	180	7.80
8/23/2009	11:30	19.97	180	7.82
8/23/2009	11:45	20.07	180	7.84
8/23/2009	12:00	20.16	181	7.86
8/23/2009	12:15	20.22	181	7.89
8/23/2009	12:30	20.32	181	7.91
8/23/2009	12:45	20.39	181	8.06
8/23/2009	13:00	20.49	181	8.10
8/23/2009	13:15	20.58	181	8.15
8/23/2009	13:30	20.69	181	8.17
8/23/2009	13:45	20.75	182	8.19
8/23/2009	14:00	20.79	182	8.19
8/23/2009	14:15	20.85	182	8.23
8/23/2009	14:30	20.89	182	8.22
8/23/2009	14:45	20.95	182	8.24
8/23/2009	15:00	21.01	182	8.28
8/23/2009	15:15	21.06	183	8.29
8/23/2009	15:30	21.10	183	8.29
8/23/2009	15:45	21.14	183	8.29
8/23/2009	16:00	21.17	183	8.28

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/23/2009	16:15	21.16	183	8.28
8/23/2009	16:30	21.15	183	8.26
8/23/2009	16:45	21.13	183	8.27
8/23/2009	17:00	21.10	183	8.24
8/23/2009	17:15	21.08	184	8.22
8/23/2009	17:30	21.05	184	8.21
8/23/2009	17:45	21.01	184	8.18
8/23/2009	18:00	20.99	184	8.17
8/23/2009	18:15	20.97	184	8.15
8/23/2009	18:30	20.96	183	8.14
8/23/2009	18:45	20.95	183	8.12
8/23/2009	19:00	20.93	185	8.10
8/23/2009	19:15	20.92	184	8.10
8/23/2009	19:30	20.90	185	8.10
8/23/2009	19:45	20.89	183	8.09
8/23/2009	20:00	20.87	185	8.07
8/23/2009	20:15	20.86	185	8.07
8/23/2009	20:30	20.84	185	8.04
8/23/2009	20:45	20.83	185	8.02
8/23/2009	21:00	20.81	185	8.01
8/23/2009	21:15	20.79	185	8.02
8/23/2009	21:30	20.78	186	8.01
8/23/2009	21:45	20.75	186	7.98
8/23/2009	22:00	20.73	186	7.96
8/23/2009	22:15	20.71	186	7.95
8/23/2009	22:30	20.68	186	7.94
8/23/2009	22:45	20.65	186	7.91
8/23/2009	23:00	20.61	186	7.90
8/23/2009	23:15	20.58	186	7.88
8/23/2009	23:30	20.55	187	7.87
8/23/2009	23:45	20.53	187	7.85

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/24/2009	0:00	20.50	187	7.83
8/24/2009	0:15	20.49	187	7.82
8/24/2009	0:30	20.46	187	7.83
8/24/2009	0:45	20.44	187	7.78
8/24/2009	1:00	20.40	187	7.80
8/24/2009	1:15	20.37	187	7.78
8/24/2009	1:30	20.35	187	7.75
8/24/2009	1:45	20.32	188	7.75
8/24/2009	2:00	20.29	188	7.74
8/24/2009	2:15	20.24	188	7.73
8/24/2009	2:30	20.21	188	7.74
8/24/2009	2:45	20.18	188	7.72
8/24/2009	3:00	20.14	188	7.70
8/24/2009	3:15	20.11	188	7.70
8/24/2009	3:30	20.08	188	7.72
8/24/2009	3:45	20.04	188	7.69
8/24/2009	4:00	20.01	188	7.68
8/24/2009	4:15	19.98	189	7.69
8/24/2009	4:30	19.95	177	7.68
8/24/2009	4:45	19.92	189	7.65
8/24/2009	5:00	19.89	189	7.69
8/24/2009	5:15	19.86	189	7.66
8/24/2009	5:30	19.82	189	7.67
8/24/2009	5:45	19.79	189	7.66
8/24/2009	6:00	19.76	189	7.66
8/24/2009	6:15	19.72	189	7.63
8/24/2009	6:30	19.69	190	7.65
8/24/2009	6:45	19.66	190	7.65
8/24/2009	7:00	19.63	190	7.63
8/24/2009	7:15	19.60	190	7.66
8/24/2009	7:30	19.58	190	7.65

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/24/2009	7:45	19.56	190	7.67
8/24/2009	8:00	19.54	190	7.67
8/24/2009	8:15	19.54	190	7.68
8/24/2009	8:30	19.53	190	7.68
8/24/2009	8:45	19.53	191	7.68
8/24/2009	9:00	19.54	191	7.70
8/24/2009	9:15	19.56	191	7.73
8/24/2009	9:30	19.59	191	7.74
8/24/2009	9:45	19.64	191	7.76
8/24/2009	10:00	19.69	191	7.79
8/24/2009	10:15	19.77	191	7.85
8/24/2009	10:30	19.86	191	7.91
8/24/2009	10:45	19.95	192	7.89
8/24/2009	11:00	20.04	192	7.94
8/24/2009	11:15	20.12	192	8.01
8/24/2009	11:30	20.22	192	8.03
8/24/2009	11:45	20.31	192	8.10
8/24/2009	12:00	20.42	192	8.12
8/24/2009	12:15	20.51	192	8.15
8/24/2009	12:30	20.59	192	8.18
8/24/2009	12:45	20.70	192	8.22
8/24/2009	13:00	20.76	193	8.25
8/24/2009	13:15	20.86	193	8.28
8/24/2009	13:30	20.93	193	8.31
8/24/2009	13:45	21.01	193	8.31
8/24/2009	14:00	21.07	193	8.33
8/24/2009	14:15	21.13	193	8.32
8/24/2009	14:30	21.19	193	8.37
8/24/2009	14:45	21.24	193	8.39
8/24/2009	15:00	21.29	194	8.40
8/24/2009	15:15	21.33	194	8.45

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/24/2009	15:30	21.37	194	8.43
8/24/2009	15:45	21.39	194	8.46
8/24/2009	16:00	21.41	194	8.45
8/24/2009	16:15	21.41	194	8.44
8/24/2009	16:30	21.41	194	8.40
8/24/2009	16:45	21.39	194	8.41
8/24/2009	17:00	21.38	194	8.37
8/24/2009	17:15	21.36	195	8.38
8/24/2009	17:30	21.34	194	8.37
8/24/2009	17:45	21.32	195	8.31
8/24/2009	18:00	21.30	195	8.27
8/24/2009	18:15	21.28	195	8.26
8/24/2009	18:30	21.27	195	8.23
8/24/2009	18:45	21.26	195	8.21
8/24/2009	19:00	21.25	195	8.16
8/24/2009	19:15	21.24	196	8.16
8/24/2009	19:30	21.24	196	8.14
8/24/2009	19:45	21.23	196	8.13
8/24/2009	20:00	21.22	196	8.09
8/24/2009	20:15	21.21	196	8.03
8/24/2009	20:30	21.20	196	8.05
8/24/2009	20:45	21.19	196	8.02
8/24/2009	21:00	21.18	196	8.02
8/24/2009	21:15	21.17	196	7.96
8/24/2009	21:30	21.16	196	7.97
8/24/2009	21:45	21.15	197	7.92
8/24/2009	22:00	21.14	197	7.89
8/24/2009	22:15	21.12	197	7.91
8/24/2009	22:30	21.10	197	7.88
8/24/2009	22:45	21.09	197	7.86
8/24/2009	23:00	21.06	197	7.82

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/24/2009	23:15	21.04	197	7.82
8/24/2009	23:30	21.01	197	7.79
8/24/2009	23:45	20.99	197	7.81
8/25/2009	0:00	20.96	197	7.77
8/25/2009	0:15	20.93	198	7.74
8/25/2009	0:30	20.91	198	7.70
8/25/2009	0:45	20.89	198	7.66
8/25/2009	1:00	20.87	198	7.67
8/25/2009	1:15	20.85	198	7.62
8/25/2009	1:30	20.83	198	7.60
8/25/2009	1:45	20.81	198	7.58
8/25/2009	2:00	20.80	198	7.55
8/25/2009	2:15	20.78	198	7.57
8/25/2009	2:30	20.77	198	7.54
8/25/2009	2:45	20.75	199	7.54
8/25/2009	3:00	20.74	199	7.53
8/25/2009	3:15	20.72	199	7.51
8/25/2009	3:30	20.70	199	7.48
8/25/2009	3:45	20.68	199	7.48
8/25/2009	4:00	20.66	199	7.46
8/25/2009	4:15	20.63	199	7.45
8/25/2009	4:30	20.60	199	7.44
8/25/2009	4:45	20.57	199	7.40
8/25/2009	5:00	20.53	199	7.41
8/25/2009	5:15	20.49	200	7.39
8/25/2009	5:30	20.45	200	7.39
8/25/2009	5:45	20.41	200	7.34
8/25/2009	6:00	20.36	200	7.37
8/25/2009	6:15	20.33	200	7.41
8/25/2009	6:30	20.28	200	7.39
8/25/2009	6:45	20.25	200	7.38

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/25/2009	7:00	20.22	200	7.37
8/25/2009	7:15	20.18	201	7.41
8/25/2009	7:30	20.17	201	7.41
8/25/2009	7:45	20.16	201	7.40
8/25/2009	8:00	20.16	201	7.43
8/25/2009	8:15	20.16	201	7.37
8/25/2009	8:30	20.17	201	7.42
8/25/2009	8:45	20.18	201	7.18
8/25/2009	9:00	20.19	201	7.31
8/25/2009	9:15	20.21	201	7.41
8/25/2009	9:30	20.24	201	7.37
8/25/2009	9:45	20.28	202	7.51
8/25/2009	10:00	20.34	202	7.51
8/25/2009	10:15	20.43	202	7.57
8/25/2009	10:30	20.52	202	7.63
8/25/2009	10:45	20.62	202	7.71
8/25/2009	11:00	20.74	202	7.76
8/25/2009	11:15	20.87	202	7.87
8/25/2009	11:30	21.01	202	7.91
8/25/2009	11:45	21.14	202	7.98
8/25/2009	12:00	21.26	203	8.04
8/25/2009	12:15	21.38	203	8.06
8/25/2009	12:30	21.48	203	8.11
8/25/2009	12:45	21.59	203	8.17
8/25/2009	13:00	21.69	203	8.19
8/25/2009	13:15	21.79	203	8.24
8/25/2009	13:30	21.87	203	8.24
8/25/2009	13:45	21.95	203	8.25
8/25/2009	14:00	22.01	203	8.26
8/25/2009	14:15	22.04	203	8.31
8/25/2009	14:30	22.09	204	8.31

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/25/2009	14:45	22.11	204	8.29
8/25/2009	15:00	22.15	204	8.34
8/25/2009	15:15	22.18	204	8.30
8/25/2009	15:30	22.21	204	8.40
8/25/2009	15:45	22.24	204	8.38
8/25/2009	16:00	22.25	204	8.41
8/25/2009	16:15	22.24	204	8.39
8/25/2009	16:30	22.24	204	8.41
8/25/2009	16:45	22.21	204	8.40
8/25/2009	17:00	22.18	204	8.35
8/25/2009	17:15	22.17	203	8.37
8/25/2009	17:30	22.17	205	8.34
8/25/2009	17:45	22.15	205	8.31
8/25/2009	18:00	22.14	205	8.26
8/25/2009	18:15	22.14	205	8.24
8/25/2009	18:30	22.14	205	8.22
8/25/2009	18:45	22.14	205	8.17
8/25/2009	19:00	22.14	205	8.15
8/25/2009	19:15	22.14	205	8.09
8/25/2009	19:30	22.13	206	8.06
8/25/2009	19:45	22.12	206	8.03
8/25/2009	20:00	22.11	206	8.00
8/25/2009	20:15	22.09	206	7.95
8/25/2009	20:30	22.07	206	7.92
8/25/2009	20:45	22.05	206	7.93
8/25/2009	21:00	22.03	206	7.87
8/25/2009	21:15	22.01	206	7.84
8/25/2009	21:30	21.99	206	7.79
8/25/2009	21:45	21.98	206	7.78
8/25/2009	22:00	21.96	206	7.75
8/25/2009	22:15	21.94	207	7.76

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/25/2009	22:30	21.93	207	7.75
8/25/2009	22:45	21.92	207	7.71
8/25/2009	23:00	21.90	207	7.71
8/25/2009	23:15	21.89	207	7.70
8/25/2009	23:30	21.87	207	7.67
8/25/2009	23:45	21.85	207	7.68
8/26/2009	0:00	21.83	207	7.62
8/26/2009	0:15	21.81	207	7.62
8/26/2009	0:30	21.78	207	7.58
8/26/2009	0:45	21.76	207	7.57
8/26/2009	1:00	21.73	208	7.56
8/26/2009	1:15	21.69	208	7.54
8/26/2009	1:30	21.66	208	7.53
8/26/2009	1:45	21.62	208	7.49
8/26/2009	2:00	21.59	208	7.50
8/26/2009	2:15	21.55	208	7.49
8/26/2009	2:30	21.51	208	7.46
8/26/2009	2:45	21.48	208	7.43
8/26/2009	3:00	21.44	208	7.41
8/26/2009	3:15	21.41	208	7.41
8/26/2009	3:30	21.38	208	7.38
8/26/2009	3:45	21.35	209	7.36
8/26/2009	4:00	21.33	209	7.35
8/26/2009	4:15	21.30	209	7.31
8/26/2009	4:30	21.29	209	7.32
8/26/2009	4:45	21.27	209	7.29
8/26/2009	5:00	21.25	209	7.25
8/26/2009	5:15	21.24	209	7.26
8/26/2009	5:30	21.23	209	7.22
8/26/2009	5:45	21.22	209	7.22
8/26/2009	6:00	21.22	209	7.21

Date	Time	Temp (°C)	Specific Cond (µS/cm)	DO (mg/L)
8/26/2009	6:15	21.21	210	7.17
8/26/2009	6:30	21.20	210	7.15
8/26/2009	6:45	21.19	209	7.13
8/26/2009	7:00	21.19	208	7.13
8/26/2009	7:15	21.18	210	7.10

## **Appendix D**

Missouri Historical Agricultural Weather Database for August 11-26, 2009  
Courtesy of University of Missouri Extension



**Weather Station:** Novelty, Knox County, MO  
**Weather Description:** Greenley Memorial Center (1 mile east of Novelty)  
**Starting Period:** August 11, 2009  
**Ending Period:** August 26, 2009



MONTH	DAY	YEAR	TOTAL PRECIP INCHES
8	11	2009	0.00
8	12	2009	0.00
8	13	2009	0.00
8	14	2009	0.00
8	15	2009	0.00
8	16	2009	2.62
8	17	2009	1.00
8	18	2009	0.00
8	19	2009	1.24
8	20	2009	0.36
8	21	2009	0.00
8	22	2009	0.00
8	23	2009	0.00
8	24	2009	0.00
8	25	2009	0.00
8	26	2009	0.00

**Total:** 5.22

**Avg:**